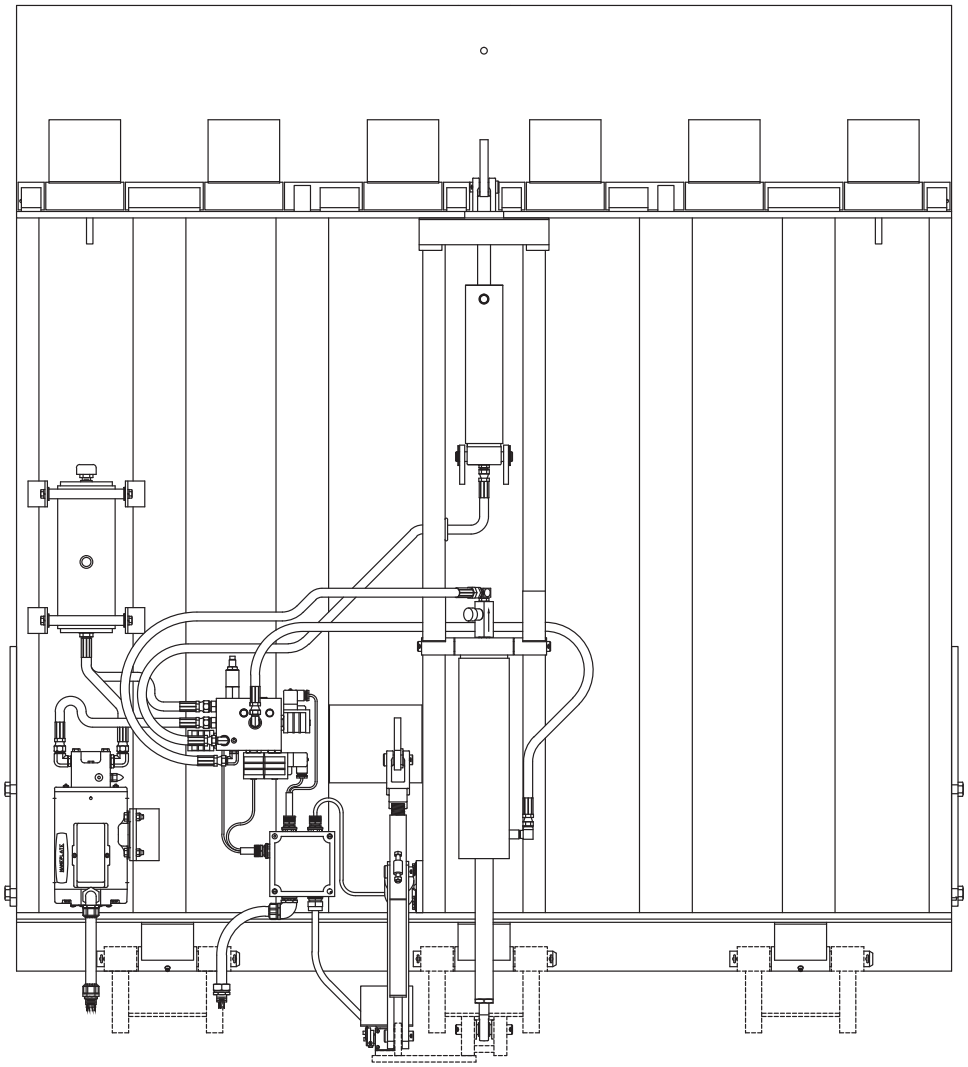
A Division of Systems, Inc.

VSH SERIES

Dock Leveler

Owner's/User's Manual



MCGUIRE • Division of Systems, Inc. • W194 N11481 McCormick Drive • Germantown, WI 53022
800.624.8473 • fax: 262.257.9399 • www.**wbmcguire**.com • techservices@docksystemsinc.com

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Recognize Safety Information

Safety-Alert Symbol

The Safety-Alert Symbol identifies important safety messages on equipment, safety signs, in manuals, or elsewhere. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

DANGER

The use of the word DANGER signifies the presence of an extreme hazard or unsafe practice which will most likely result in severe injury or death.

WARNING

The use of the word WARNING signifies the presence of a serious hazard or unsafe practice which may result in serious injury or death.

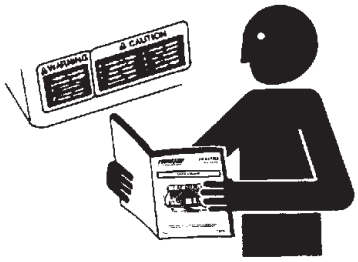
CAUTION

The use of the word CAUTION signifies possible hazard or unsafe practice which could result in personal injury.

IMPORTANT

The use of the word IMPORTANT is to draw attention to a procedure that needs to be followed to prevent machine damage.

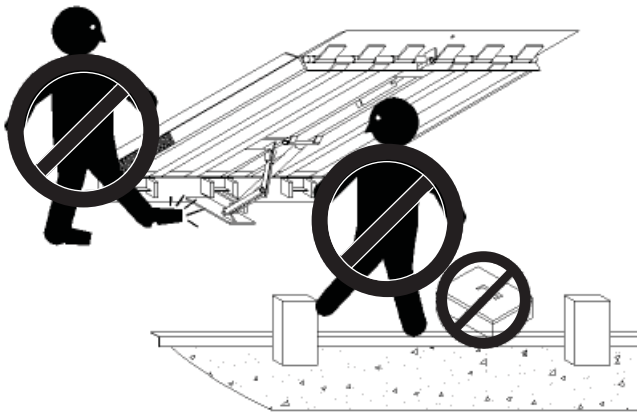
General Operational Safety Precautions



Read and understand the operating instructions and become thoroughly familiar with the equipment and its controls before operating the dock leveler.

Never operate a dock leveler while a safety device or guard is removed or disconnected.

Never remove DANGER, WARNING, or CAUTION signs or Decal's on the equipment unless replacing them.



Do not start the equipment until all unauthorized personnel in the area have been warned and have moved outside the operating zone.

Remove any tools or foreign objects from the operating zone before starting.

Keep the operating zone free of obstacles that could cause a person to trip or fall.

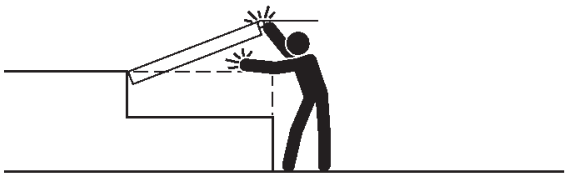
Operational Safety Precautions

Learn the safe way to operate this equipment. Read and understand the manufacturer's instructions. If you have any questions, ask your supervisor.

DANGER

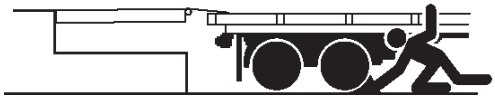
Stay clear of dock leveling device when transport vehicle is entering or leaving area.

Do not move or use the dock leveling device if anyone is under or in front of it.

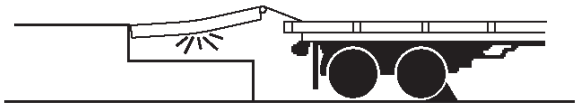


Keep hands and feet clear of pinch points. Avoid putting any part of your body near moving parts.

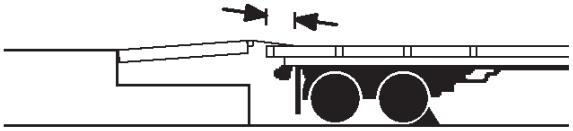
WARNING



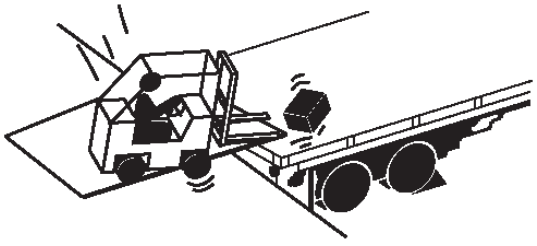
Chock/restrain all transport vehicles. Never remove the wheel chocks until loading or unloading is finished and transport vehicle driver has been given permission to drive away.



Do not use a broken or damage dock leveling device. Make sure proper service and maintenance procedures have been performed before using.

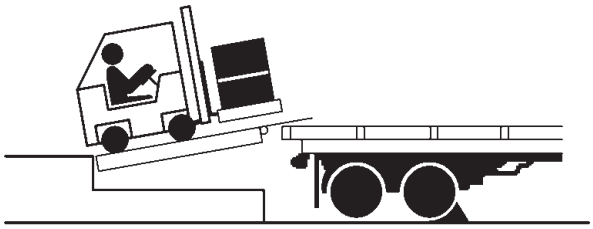


Make sure lip overlaps onto transport vehicle at least 4 in. (102 mm).

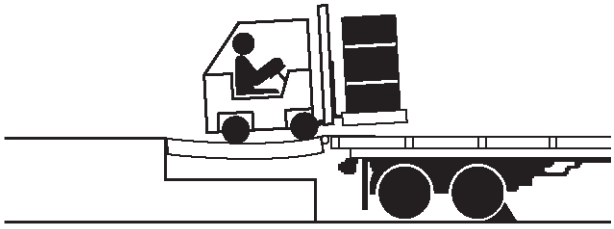


Keep a safe distance from both side edges.

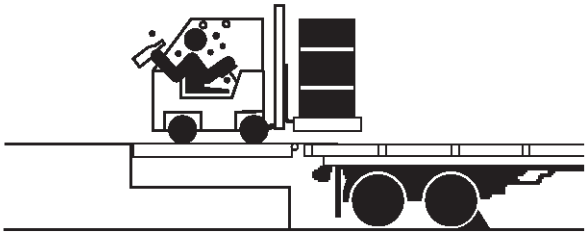
⚠ WARNING



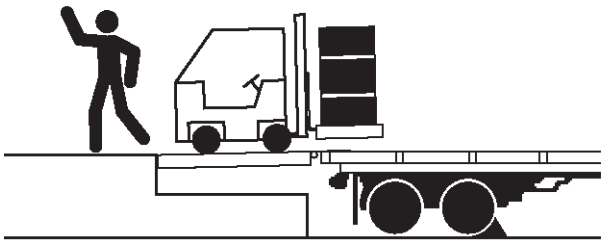
Do not use dock leveling device if transport vehicle is too high or too low.



Do not overload the dock leveling device.



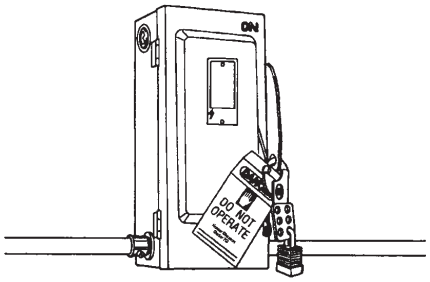
Do not operate any equipment while under the influence of alcohol or drugs.



Do not leave equipment or material unattended on dock leveling device.

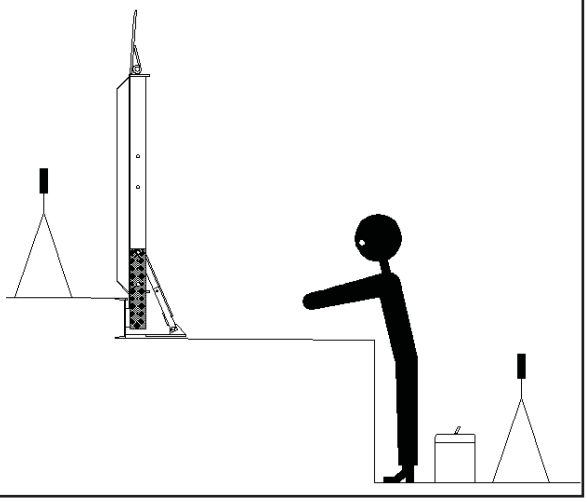
Maintenance Safety Precautions

DANGER



Hydraulic and electrical power must be OFF when servicing the equipment. For maximum protection, use an OSHA approved locking device to lock out all power sources. Only the person servicing the equipment should have the key to unlock the device.

CAUTION



Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the unit before maintenance is complete.

The storage maintenance props (2) must be in the “Maintenance” position when working under the dock leveler and the storage prop must have a grade 8 or better in the locking hole. For maximum protection, use an OSHA approved locking device to lock out the main power supply. Only the person servicing the equipment should have the key to unlock the device.

WARNING

ALWAYS stand clear of dock leveler and lip when working in front of the dock leveler. Failure to do this may result in serious personal injury or death.

WARNING

ALWAYS disconnect electrical power source and ground wire before welding on dock leveler.

DO NOT ground welding equipment to any hydraulic or electrical components of the dock leveler. Always ground to the dock leveler frame.

Failure to follow these instructions may result in damage to dock leveler and/or serious personal injury or death.

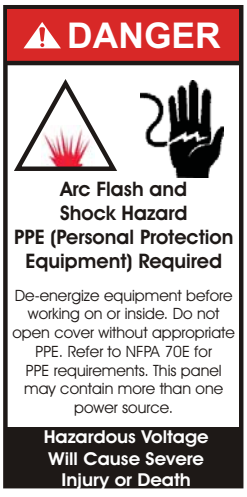
WARNING

DO NOT grind or weld if hydraulic fluid or other flammable liquid is present on the surface to be ground or welded.

DO NOT grind or weld if uncontained hydraulic fluid or other flammable liquid is present. Stray sparks can ignite spills or leaks near the work area. Always clean up the oil leaks and spills before proceeding with grinding or welding.

Always keep a fire extinguisher of the proper type nearby when grinding or welding.

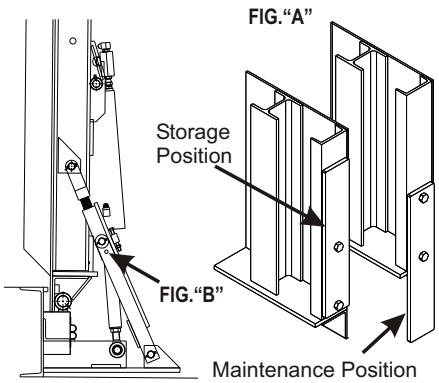
Failure to follow these instructions may result in serious personal injury or death.



Safety Decal's

DANGER

CRUSH HAZARD
DO NOT WORK UNDER DOCK LEVELER unless all maintenance props have been properly positioned. Side maintenance props must be positioned as shown in figure "A" below. Prop locking pin must be positioned as shown in figure "B" below. Refer to owner's/user's manual for proper procedure. Failure to do so will result in death or serious injury.



Safety Decal on Leveler Frame
Part # 1751-0230

DANGER

CRUSH HAZARD
DO NOT ENTER PIT unless dock leveler is safely supported by maintenance prop. Place barriers on drive way and dock floor to indicate service work being performed. Refer to owner's/user's manual for proper maintenance procedures. Failure to comply will result in death or serious injury.

Safety Decal on Rear Platform
Part# 1751-0130

DANGER

CRUSH HAZARD
DO NOT REMOVE hydraulic cylinder until leveler is safely supported by maintenance prop. Refer to owner's/user's manual for proper maintenance procedure. Failure to comply will result in death or serious injury.

Safety Decal on Platform Cylinder
Part # 1751-0138

DANGER

If for any reason, the platform is raised by means other than the hydraulic system, i.e. Fork truck or crane, a hazardous condition may exist, because the main hoist cylinder will have air on the load bearing end. The cylinder will not support the platform which can fall rapidly, potentially causing injuries to anyone under the platform. Be sure the leveler is restrained per instructions in the owner's/user's manual. When repairs/service is complete unit must be operated in the "raised" direction only until visible movement of platform indicates cylinder is full. If alternate lifting means are still available, use to return platform to original lowered position and then raise unit hydraulically.

Safety Decal on Rear Platform
Part# 1751-0229

OWNER'S/USER'S RESPONSIBILITIES

1. The owner/ user should recognize the inherent dangers of the interface between the loading dock and the transportation vehicle. The owner/ user should, therefore, train and instruct all operators in the safe operation and use of the loading dock equipment in accordance with manufacturer's recommendations and industry standards. Effective operator training should also focus on the owner's/user's company policies and operating conditions. Maintaining, updating and re training all operators on safe working habits and operation of the equipment, regardless of previous experience, should be done on a regular basis and should include an understanding and familiarity with all functions of the equipment. Owner's/user's shall actively maintain, update and retrain all operators on safe working habits and operations of the equipment.

2. The manufacturer shall provide to the initial purchaser all necessary information regarding Safety Information, Operation, Installation and Safety Precautions, Recommended Initial and Periodic Inspections Procedures, Planned Maintenance Schedule, Product Specifications, Troubleshooting Guide, Parts Break Down, Warranty Information, and Manufacturers Contact Information, as well as tables to identify the grade(slope) for all variations of length or configuration of the dock leveling device and information identifying the maximum uncontrolled drop encountered when sudden removal of support while in the working range of the equipment.

3. It is recommended that when the transportation vehicle is positioned correctly in the dock opening and in contact with both bumpers, there shall be a minimum of 4.00 inches (100mm) overlap of the leveling device and the transportation vehicle at all times during the loading and unloading process.

4. The Owner/User must review all name plates, placards, decals, instructions and posted warnings and place the same in view of the operator or maintenance personnel for whom such warnings are intended for. Contact manufacturer for any replacements.

5. Manufacturer's recommended periodic maintenance and inspection procedures in effect at the date of shipment shall be followed at all times. Written documentation of maintenance, replacement parts or damage should be retained. In the event of damage notification to the manufacturer is required.

6. Loading dock equipment that has been structurally damaged or has experienced a sudden loss of main support while under load (such as what might occur when a transport vehicle pulls out from under the leveling device) shall be removed from service, inspected by a manufacturer's authorized representative, and repaired or replaced as needed before being placed back in service.

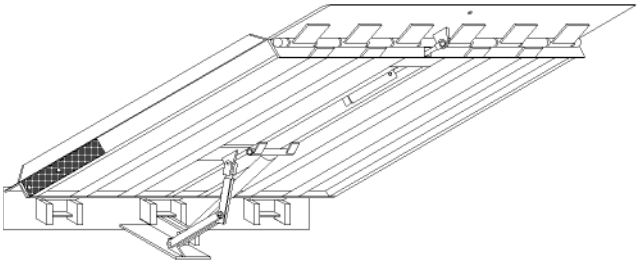
7. Any modifications or alterations of loading dock equipment shall only be done with prior written approval from the manufacturer and the same shall be at least as safe as the original equipment was prior to the modification and shall also satisfy all safety requirements of the manufacturer for the particular application of the leveling device.

8. When industrial moving devices are being used in the loading or unloading of product from the transportation vehicle, this vehicle shall have the brakes and wheel chocks applied appropriately or all other positive restraining device shall be fully utilized. It is recommended that trailers with air-ride suspension systems shall have its air exhausted prior to performing loading and unloading operation to minimize trailer bed drop.

9. Loading dock safety equipment should never be used outside of its intended use, vertical working range, or capacity. Please consult the manufacturer if you have any questions as to the use, vertical working range or capacity of the equipment. Only properly trained and authorized personnel should operate the equipment.

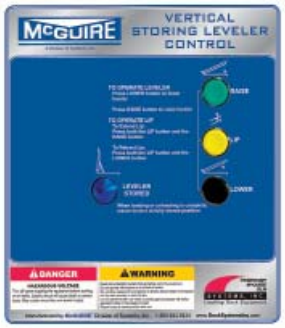
10. When selecting loading dock safety equipment, it is important to consider not only present requirements but also future plans and any possible adverse conditions, environmental factors or usage.

General Information



Congratulations on your choice of a McGuire Vertical Storing dock leveler. This manual covers the VSH (Vertical Storing Hydraulic) series dock leveler.

Designed by McGuire to be a marvel of simplicity and efficiency, your dock leveler, when properly installed, will provide many years of trouble-free performance with an absolute minimum of maintenance. Its revolutionary hydraulic system efficiently controls and operates every function. To obtain maximum performance and longest possible use, a simple program of preventive maintenance is recommended.



The VSH series dock leveler comes equipped with an electrical control panel, which allows push button operation of the dock leveler functions. Each VSH dock leveler unit and control panel has been factory pre wired and tested to ensure satisfactory operation.

To illustrate which connections are to be made in the field at installation, electrical drawings are included with each order or by contacting Technical Services.

Once again, thank you and congratulations on your purchase of a McGuire hydraulic dock leveler.

Dock Leveler Stock Specifications

Models	Nominal Size W x L
VSH-65	6’ x 5’
VSH-66	6’ x 6’
VSH-68	6’ x 8’
VSH-655	6’6” x 5’
VSH-656	6’6” x 6’
VSH-658	6’6” x 8’
VSH-75	7’ x 5’
VSH-76	7’ x 6’
VSH-78	7’ x 8’

VSH dock levelers are available in the following sizes, weight capacities, and options:

Width: VS

6 ft. (1828.8 mm)
6-1/2 ft. (1981.2 mm)
7 ft. (2133.6 mm)

Length

5 ft. (1524 mm)
6 ft. (1828.8 mm)
8 ft. (2438 mm)

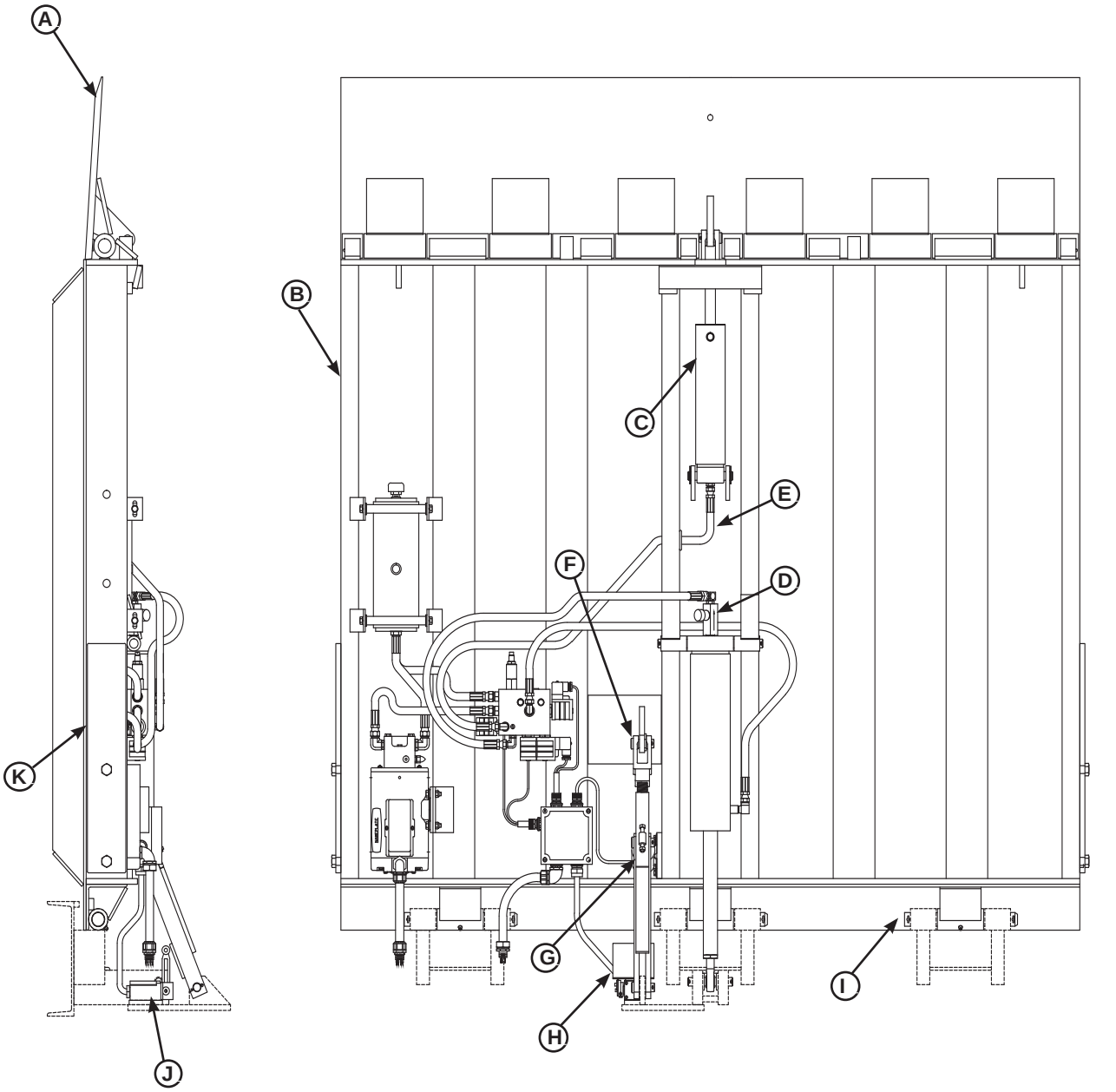
Capacity (CIR*)

40,000 lb (18 144 kg)
45,000 lb (20 412 kg)
50,000 lb (22 680 kg

* CIR (Comparative Industry Rating)

Call McGuire to discuss available powerpack mounting configurations, voltages, phases and options to meet your specific needs.

Component Identification

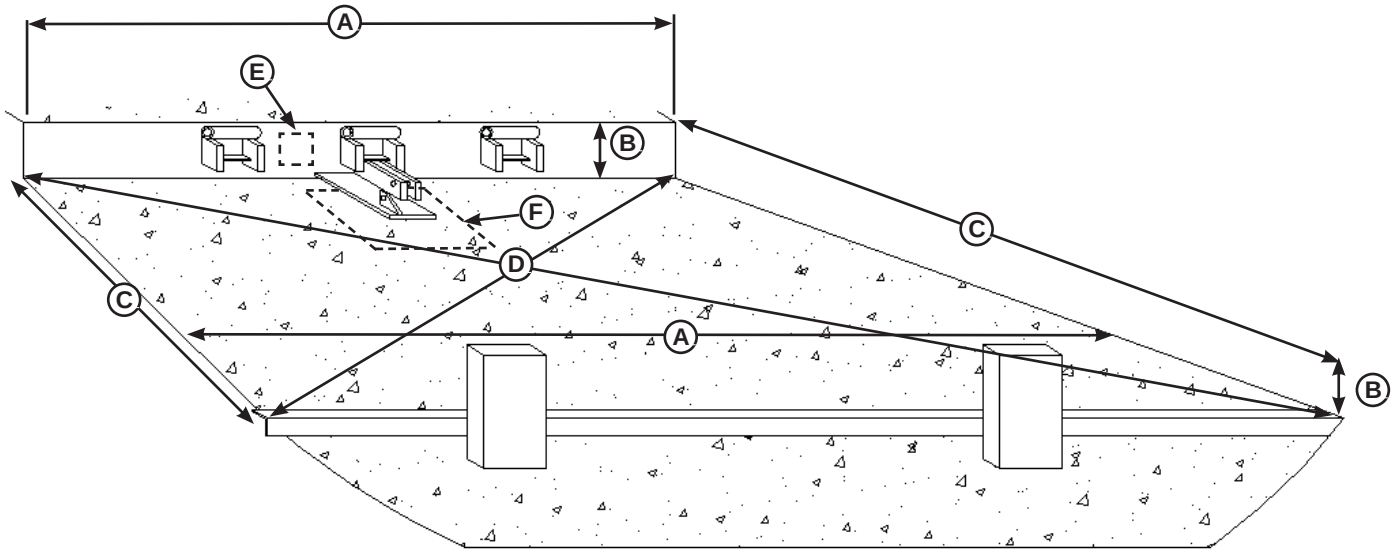


A. Lip
B. Deck
C. Lip Cylinder
D. Flow Control Valve
E. Hoist Cylinder*
F. Storage Prop Yoke
G. Prop Kicker (Behind Prop Assy)
H. Storage Prop Assembly with Lock-Out Pin included (F)
I. Hinge Pin
J. Stored Limit Switch
K. Maintenance Props

* Some models are equipped with multiple hoist cylinders.
*Powerpack may be mounted on underside of leveler or remotely.

INSTALLATION

Prepare Pit



A—Distance (Pit Width) (Front and Rear) **B— Distance (Dock Floor-to-Pit Floor) (All Four Corners) 1/2" Taper Rear to Front** **C— Distance (Pit Length) (Both Sides of Pit)** **D— Distance (Pit Corner-to-Corner) (Top, Bottom, and Both Sides)**

⚠ WARNING

Post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before installation has been completed.

Failure to follow the installation instructions can result in damage to dock leveler, the facilities, and/or serious personal injury or death.

⚠ CAUTION

Only trained installation professionals with the proper equipment should install this product.

Before lowering the dock leveler into the pit, the following must be performed:

1. Remove all debris from the pit and sweep the pit clean.

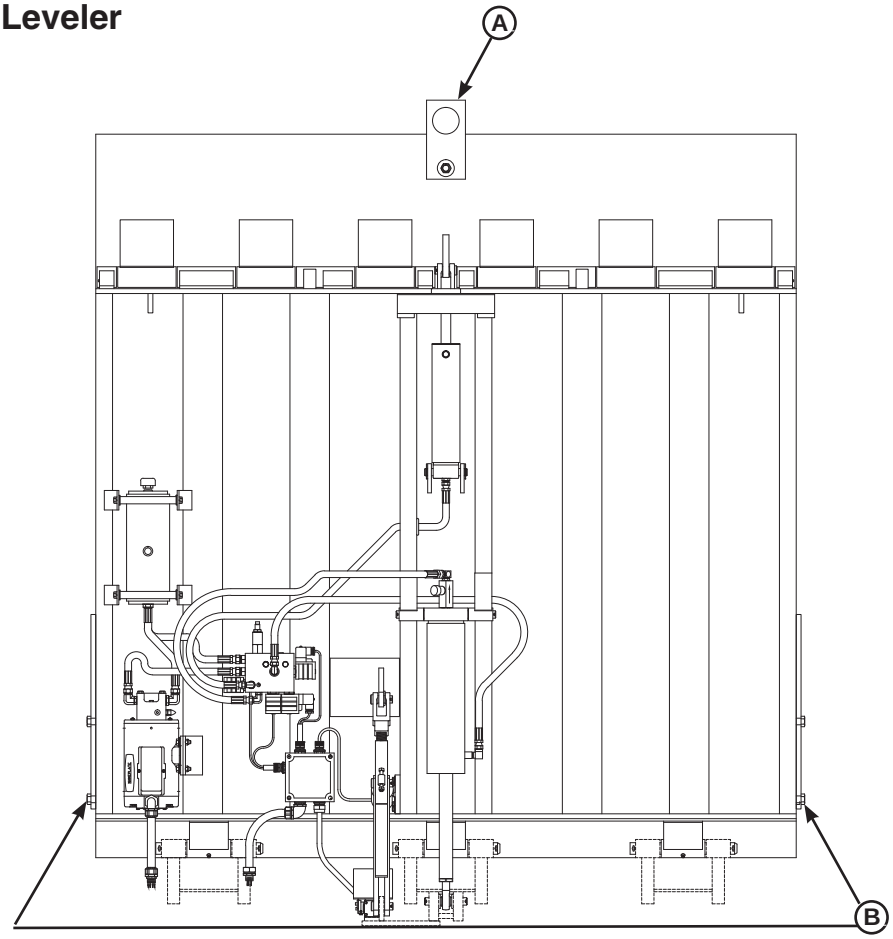
2. Check the entire dock leveler pit for proper construction according to approved/certified pit drawings. Make sure pit is square, has the proper depth and taper by making the following measurements:

   - Measure pit width distance (A) at both front and rear of pit.
   - Measure dock floor-to-pit floor distance (B) on both sides of the rear embed channel and at front if applicable.
   - Measure pit floor taper, rear to front cannot exceed 1/2" total taper.
   - Measure pit length distance (C) at both sides.
   - Measure corner-to-corner (cris-cross) distance (D) at both sides. Take measurements at dock floor level and at pit floor level.

   NOTE" If any measurement are off by more than 1/8 in. (3.18 mm) in depth, width and squareness 1/4 in + 0 in (6.32mm) contact Technical Services before proceeding.

3. Make sure the field junction box for the dock leveler (E) and floor embed plate (F) is at the correct location per pit diagrams.

Prepare Dock Leveler



A— Lifting Bracket

B — Maintenance Props

WARNING

The dock leveler is heavy. Use a lifting device and chains with the appropriate lifting capacity and reach.

Always use the lifting brackets provided with the unit whenever lowering or lifting a dock leveler into or out of a pit.

Failure to follow these instructions may result in damage to dock leveler and/or serious personal injury or death.

McGuire dock levelers are designed with installation in mind. Each unit is shipped with lifting bracket(s) (A) fastened to the platform.

IMPORTANT

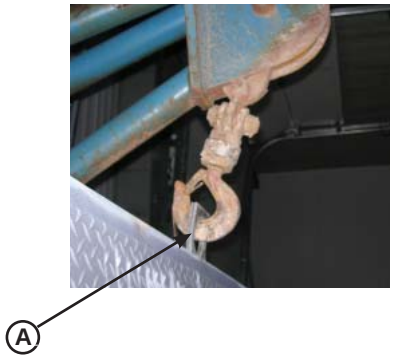
DO NOT remove the Maintenance Props at this time. They should be rotated to the lowered position during installation. They will keep the leveler in the upright position, once the hinge pins are installed, until the storage prop and hoist cylinder are installed and the leveler is ready for testing.

IMPORTANT
Installation of VSH levelers from inside is recommended due to combined height of leveler and proper lifting equipment may be greater than outside door height.

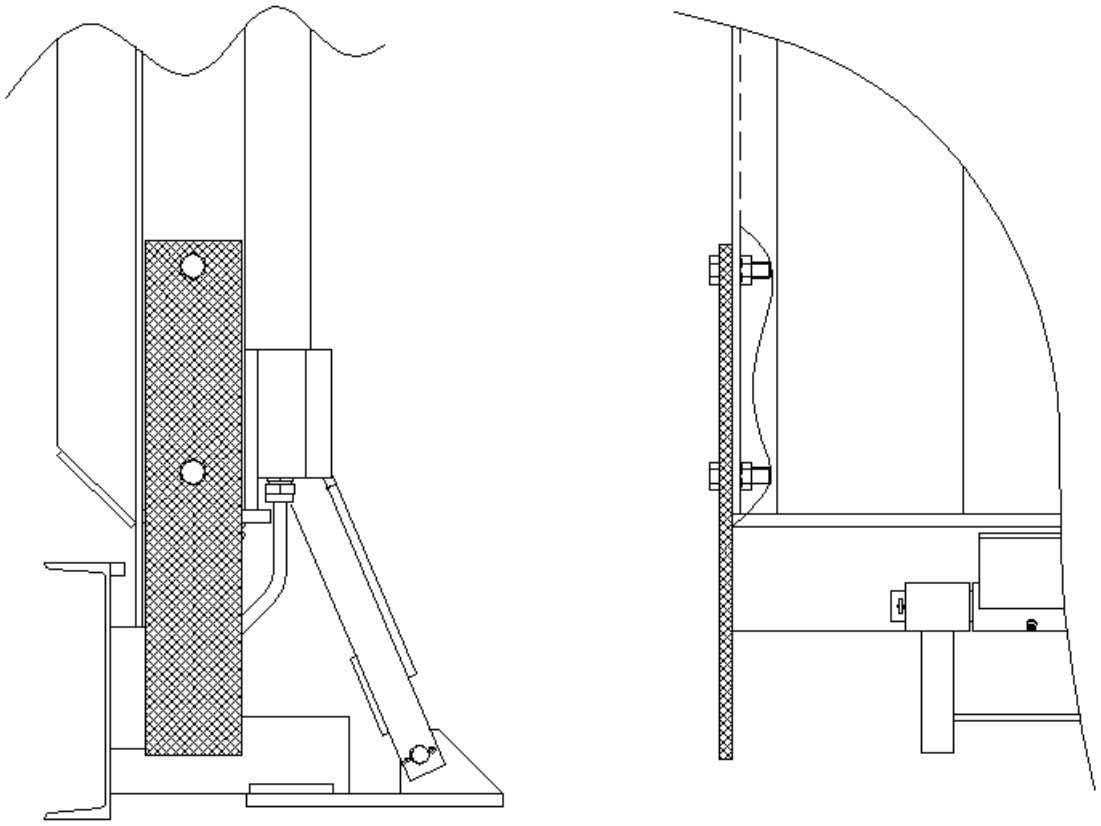
1. Remove any control panel, bumpers or pelletizing that may be banded to the dock leveler. Do not remove banding on hoist cylinder or storage prop at this time.

2. Make sure the mounting hardware of lifting bracket(s) (A) is snug. The brackets should pivot relatively freely on the mounting cap screw. DO NOT over tighten.

3. Attach lifting chain to lifting bracket(s) (A) and to a lifting device (i.e., hoist or fork truck) having the appropriate lifting capacity and reach.

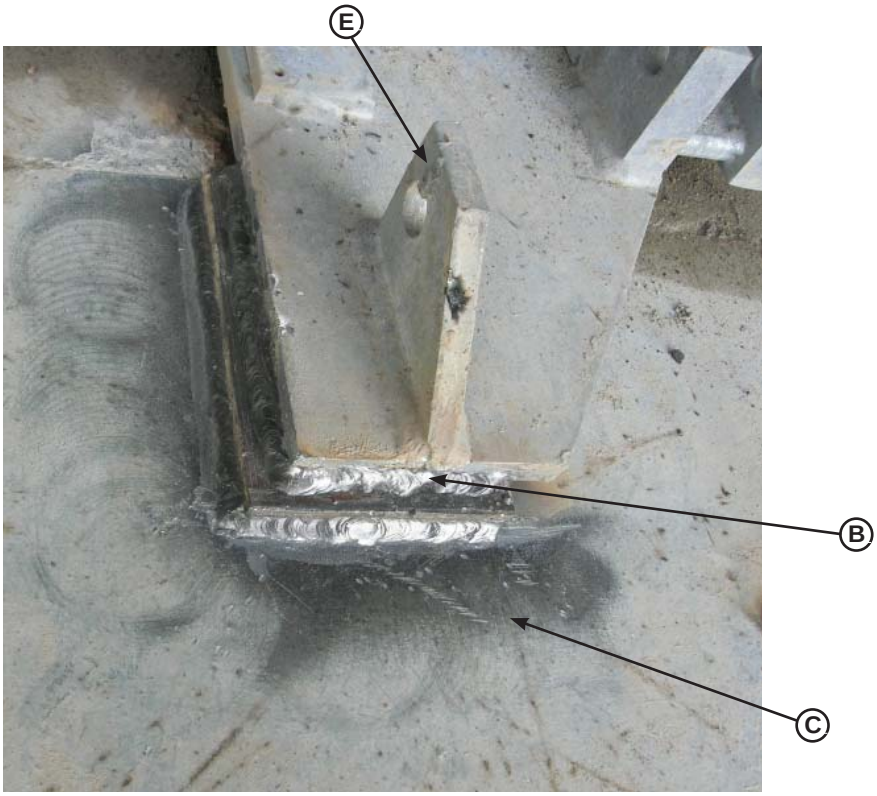


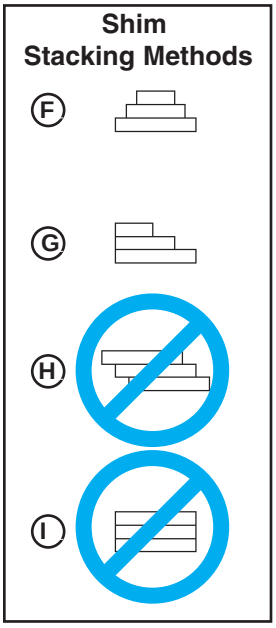
NOTE: Overall length of lifting chain and bracket (A) must be kept to a minimum to prevent interference between the lifting equipment and the building ceiling or door as the dock leveler is lowered into the pit.



Maintenance props in lowered location during installation and service.

Install Dock Leveler



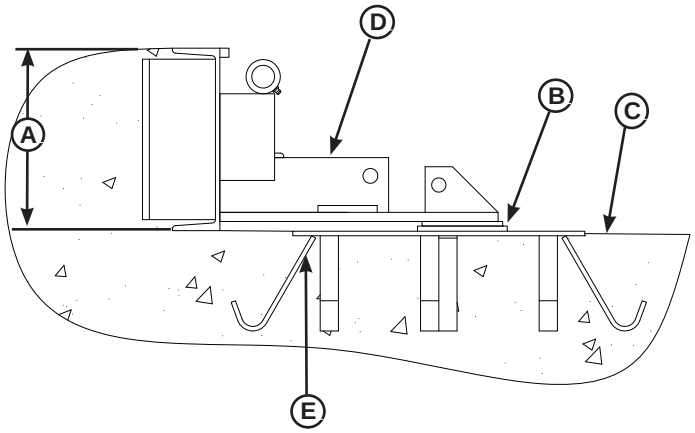


IMPORTANT

The minimum size of the shim that contacts the leveler frame (i.e., the top shim of each shim stack) must be at least 4-1/2 x 4-1/2 in. (114.3 x 114.3 mm) to support the full width of the hoist cylinder / storage prop weldment.

Use the thickest shim stock possible for stability and weld penetration purposes. DO NOT use multiple layers of 1/8 in. (3.18 mm) or thinner shim stock.

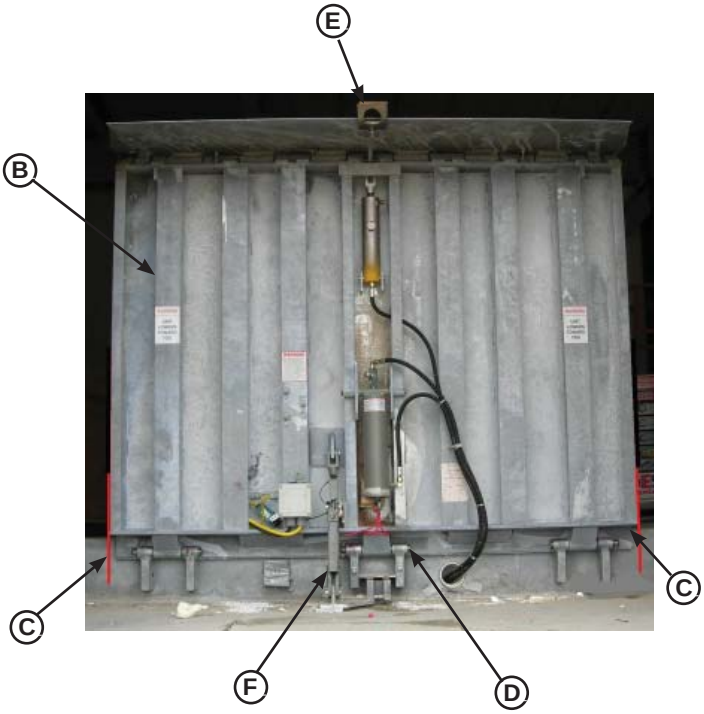
4. Before installing the leveler the Imbed channel must be shimmed and welded to the Imbed on the pit floor.



A— Distance (Leveler Frame Height)
B— Shim Location (Under Maintenance Prop) (Standard Dock Leveler Only)
C— Dock Floor
D— Rear Imbed Frame
E— Imbed Frame (Maintenance Prop)
F— Pyramid (Preferred)
G— Stepped (Acceptable)
H— Offset (Not Acceptable)
I — Straight (Not Acceptable)

WARNING

The dock leveler is heavy. Use chains and a lifting device with the appropriate lifting capacity and reach. Failure to do so may result in damage to dock leveler and/or serious personal injury or death.



A— Rear Imbed
B— Dock Leveler
C— Maintenance Props
D— Hinge Pins
E— lifting Lug
F— Storage Prop

5. Lube the three rear hinge pins using grease. Install the three pins in the rear imbed only through out the first hinge tube.

6. Lower the Vertical leveler down centering the leveler's three hinge pins with the imbeds three pins.

   - Insert the pins. Start with the outside first second install the center pin and than the last out side hinge pin.

   - Option: use a bottle jack to align the rear of the dock leveler to the imbed channel.

7. Once the three hinge pins are installed Install the Storage prop. Install latch pin.

8. Make all hydraulic connections.

9. Make all electrical connection.

Note: Do not connect hoist cylinder at this time. System must be bleed before connected see page 17.

Install Control Panel and Wiring

⚠ WARNING

The electrical power must be OFF prior to electrical installation. For maximum protection, use an OSHA approved locking device to lock out all power sources. Only the person installing the equipment should have the key to unlock the power source.

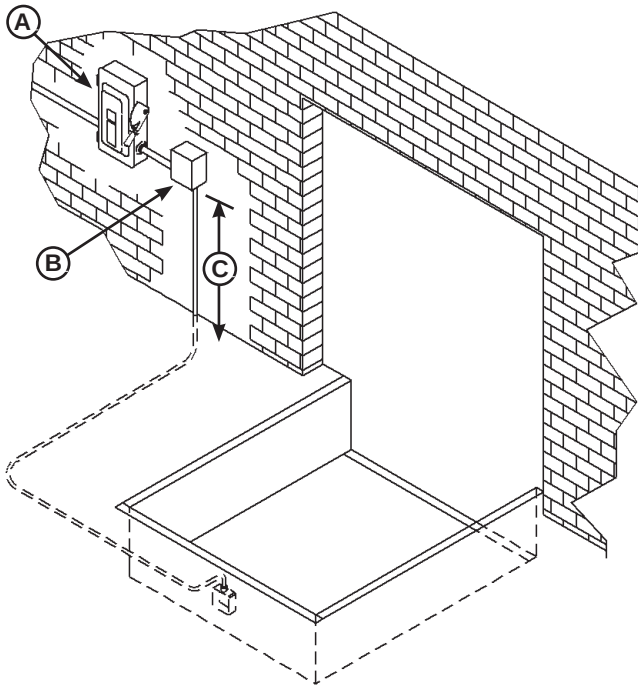
Failure to follow these instructions may result in serious personal injury or death.

⚠ WARNING

DO NOT make any final electrical connections until all welding has been completed. Failure to do this may result in serious personal injury or death.

⚠ CAUTION

All electrical work — including the installation of the disconnect panel, control panel, and final connections to the pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.



A— Disconnect Panel (provided by others)
B— Control Panel C— Distance, 48 in. (14 630 mm)

1. Mount the push button control panel (B) so bottom of control panel-to-dock floor distance (C) is 48 in. (1219.2 mm).

2. Install electrical disconnect panel (A) if not already installed.

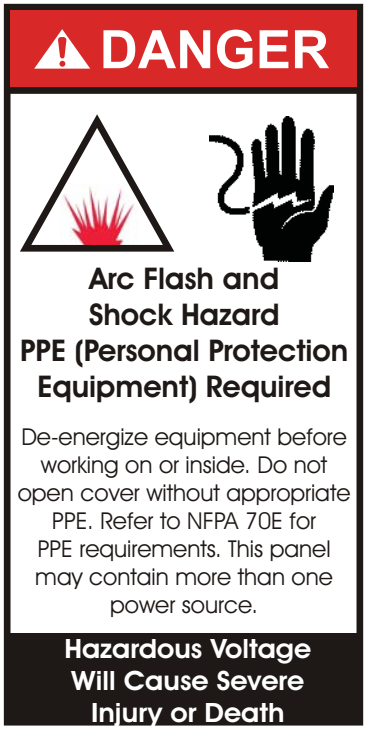
3. Install and connect the control wiring.

4. Connect the dock leveler power cable to the field wires in the pit junction box. Refer to the electrical drawings supplied with the dock leveler.

If SC leveler proceed to step 5.
If remote mount PPAC see page 17 for Purging

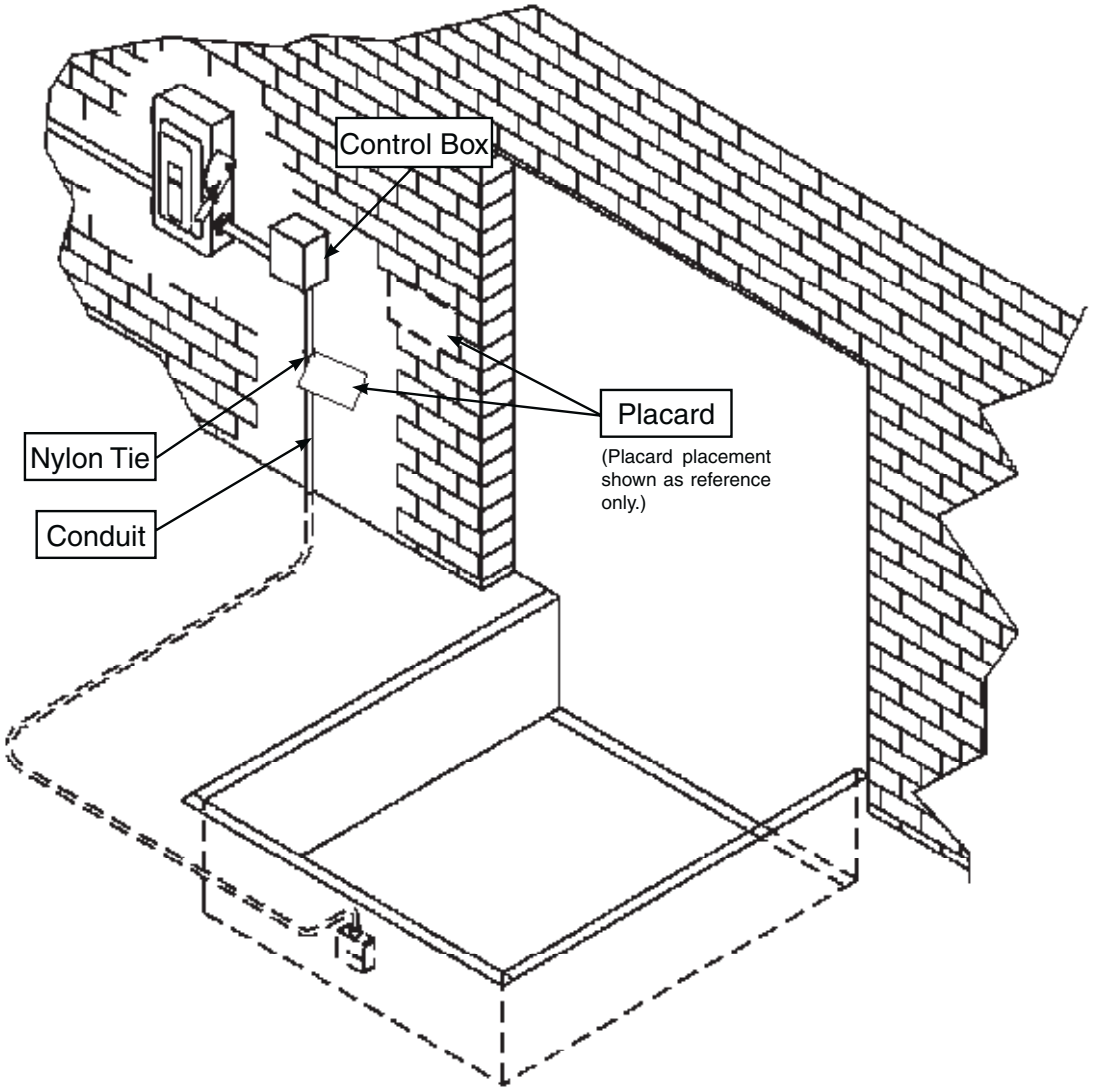
5. Lower dock leveler check to make sure the leveler goes into float mode (about 15” above dock floor) allow to dock to float to full below position. Make sure the dock makes contact with pit floor. Push and hold the RAISE button until the leveler turns off and the Blue stored light comes on.

6 Check the lip operation: Lower dock leveler check to make sure the leveler goes into float mode (about 15” above dock floor) allow to dock to float to below dock. Push and hold the RAISE button until the leveler turns off and the Blue stored light comes on.



Placard Installation Instructions

- Owner/User is responsible for the installation and placement of placards.
- Make sure placard is in plain view of dock leveler operations.
- Suggested placement of placard is near control box attached to electrical conduit by using nylon tie. If there is no control box present, mount placard on wall to the immediate left of leveler at eye level.



⚠ WARNING

DO NOT grind or weld if hydraulic fluid or other flammable liquid is present on the surface to be ground or welded.

DO NOT grind or weld if uncontained hydraulic fluid or other flammable liquid is present. Stray sparks can ignite spills or leaks near the work area. Always clean up the oil leaks and spills before proceeding with grinding or welding.

Always keep a fire extinguisher of the proper type nearby when grinding or welding.

Failure to follow these instructions may result in serious personal injury or death.

IMPORTANT

DO NOT connect the dock leveler electrical wiring and ground connections until all welding has been completed.

DO NOT ground welding equipment to any hydraulic or electrical components of the dock leveler. Always ground welding equipment to the dock leveler frame, NEVER to the platform.

Failure to follow these instructions may damage the motor, hoist cylinder, wiring, and/or control panel.

⚠ DANGER

Following start-up or if the platform is raised using an external lifting device or the hydraulic system is opened to atmosphere, air will enter into the hydraulic system.

Whenever this happens, purge air from hydraulic system fully. Failure to do this may result in damage to the equipment, serious injury or death.

Put New Dock Leveler Into Service

1. Disconnect the external lifting device and chains from the lifting brackets.
2. Complete all welding.
3. Install hydraulic hoses and fill system.
4. Connect all electrical connections.
5. Purge system (see pg. 17).
6. Connect hoist cylinder (see pg. 17)
7. Test leveler for operation.

Purging air from the VSH hydraulic system.

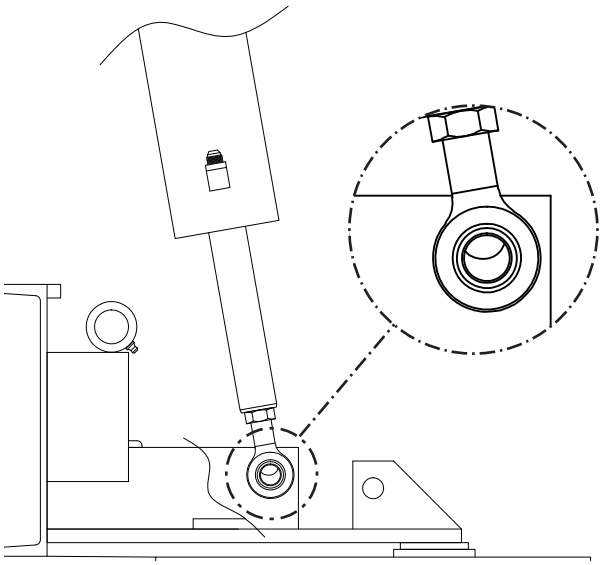
1. Begin by supporting the leveler in the stored position with the storage prop and maintenance props. Lock out the storage prop with the locking bolt.
2. Lock-out and tag-out the leveler.
3. Disconnect the lower hoist cylinder mounting pin.
4. Remove one of two screws holding the stored limit switch. Swivel stored limit switch away from storage prop (SEE PAGE 28).
5. Open down speed flow control valve (counter clockwise). Down speed control valve is located on hoist cylinder (SEE PAGE 28).
6. Restore power to the leveler. Confirm the blue stored indicator light is no longer illuminated.
7. Cycle the hoist cylinder up and down at least 6 times using the leveler's own hydraulic power.
8. Connect the hoist cylinder to the base of the Imbed is channel.
9. Adjust down speed flow control to factory settings. The settings are 1-1/2 turns out from fully closed.
10. Maintenance props must be moved back to the working positions.
11. The lip cylinder is self purging. Lower the leveler to a 45 degree angle. Cycle lip by pressing the lower and lip button together to lower the lip. Press the raise and lip button together to raise the lip.
12 Make sure all air is purged from the hydraulic cylinders after set-up and any time air is introduced to the system. Failure to do this may result in serious personal injury or death.

⚠ WARNING

WARNING: Stay clear of lip at all times as it may fall if air is present in the system.

⚠ WARNING

Always stand clear of platform lip when working in front of the dock leveler. Serious personal injury or death may result.

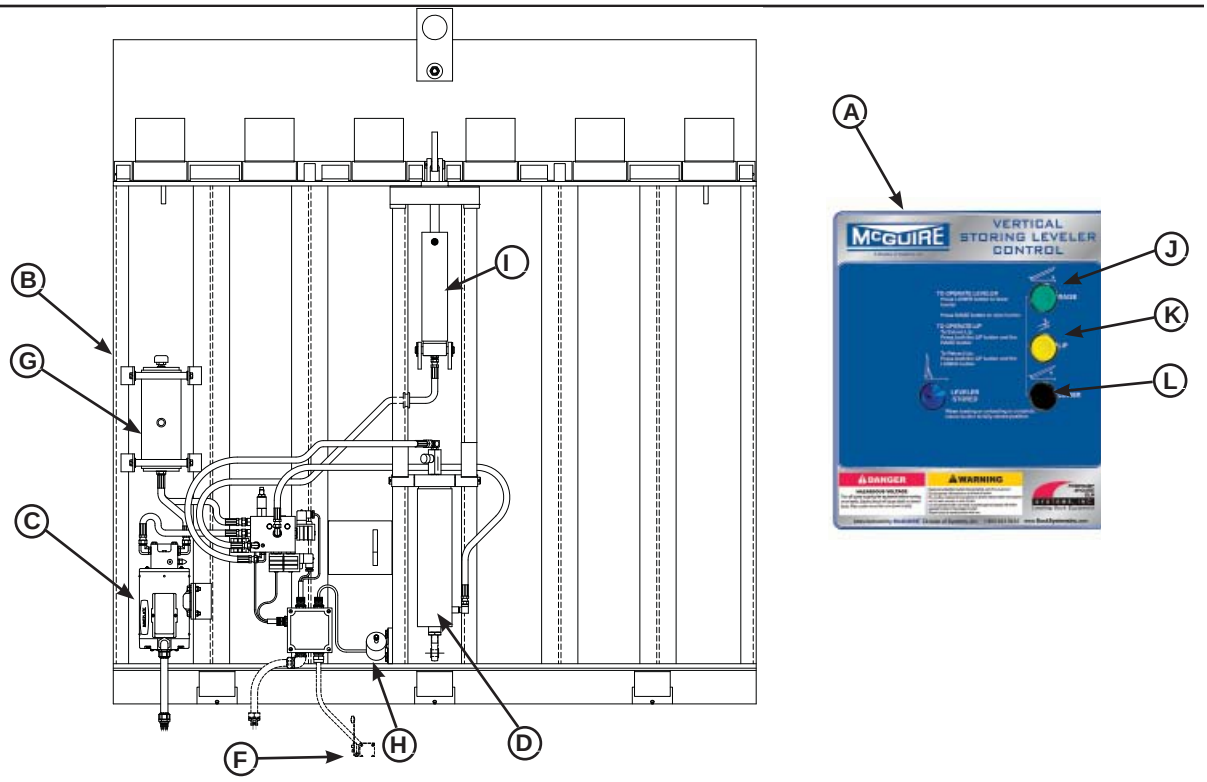


Rod Eye adjustment & New installation.

1. Support the leveler with the maintenance props. Lock out the storage prop with the locking bolt.
2. Lock-out and tag-out the leveler.
3. Remove lower hoist cylinder mounting pin.
4. Remove one of two screws holding the stored limit switch. Swivel stored limit switch away from storage prop.
5. Restore power to the leveler. Confirm the blue stored indicator light is no longer illuminated.
6. Cycle the hoist cylinder up and down at least once to make cylinder is fully extended.
7. Rod eye should be adjusted so the center of the rod eye is half way below the center of the hole of the imbed. After adjusted tighten jam nut.
8. To center the rod eye with the imbed tap the LOWER button until the pin (lube pin) can be installed.
9. After pin has been installed store maintenance props and locking pin test the leveler for operation.

OPERATION

Theory



A — Control Box
B — Platform
C — PowerPack
D — Hoist Cylinder
F — Limit Switch
G — Reservoir
H — Solenoid
I— Lip Cylinder
J — Raise Button
K — Lip Button
L— Lower Button

When the leveler is operated an electric motor is activated (C) which, drives a hydraulic pump. The hydraulic pump forces oil into the platform cylinder(s) (D), causing the platform to rise or lower. Releasing the button will stop the platform from moving (except in the float mode).

To lower the Vertical leveler the LOWER button (L) will be pushed. The leveler will first come toward the operator, an electrical solenoid will activate the Storage prop. The solenoid (H) will hold the Storage prop out for a short period of time to allow the leveler to lower. The leveler will start to lower down to the transport vehicle. When the leveler is about 12” to 15” above dock height the leveler will go into float mode. You will also hear the motor make a different sound and you no longer need to hold the LOWER button. This feature is designed into the operation of the leveler to allow for the floating/vertical motion of the transport vehicle during loading and unloading.

LIP Lower and LIP Raise (K). To lower the lip the vertical leveler must be in the lower mode. Press the LOWER button and LIP button at the same time the motor will shut off and the lip will lower. To raise the lip the leveler must be in the raise mode. Press the RAISE button and the LIP button the motor will still run and the lip will raise. The LIP push button is inactive while the leveler is in the float mode. Also when leveler is stored.

* Some models are equipped with multiple cylinders.

Operating Instructions

DANGER

Stay clear of dock leveler when transport vehicle is entering or leaving dock area.

DO NOT move or use the dock leveler if anyone is under or in front of leveler.

Keep hands and feet clear of pinch points. Avoid putting any part of your body near moving parts.

Failure to follow these instructions most likely result in severe personal injury or death.

WARNING

Only trained personnel should operate the dock leveler.

DO NOT use a broken or damaged dock leveler. Make sure proper service and maintenance procedures have been performed on leveler before using.

Transport vehicles wheels must be chocked unless the vehicle restraint is used. Never remove the wheel chocks until loading/unloading is finished and transport vehicle has been given permission to leave.

Make sure platform lip rests on the transport vehicles bed with at least 4 in. (102 mm) of overlap.

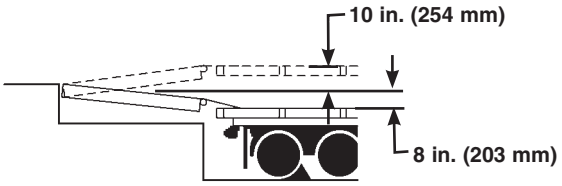
Maintain a safe distance from side edges of leveler during the loading/unloading process.

Failure to follow these instructions may result in serious personal injury or death.

The dock leveler operating instructions are divided into the two methods of loading and unloading:

- **For ramp loading and unloading, see Ramp Loading/Unloading Instructions on page 20.**
- **For end loading and unloading, see End Loading/Unloading Instructions on page 21.**

WARNING



The VSH hydraulic dock leveler is designed to compensate for a maximum +10 in. (254 mm) above and - 8 in. (203) below dock difference between the loading dock and the transport vehicle bed. DO NOT use the dock leveler if the transport vehicle bed is more than 10 in. above 8 in. below higher or lower than the dock floor.

Based on a 5 ft. or 6 ft. long leveler.

*Service height may vary with design specifications

DO NOT overload the dock leveler.

DO NOT operate any equipment while under the influence of alcohol or drugs.

DO NOT leave equipment or material unattended on the dock leveler.

Failure to follow these instructions may result in personal injury and/or damage to equipment.

Operating Instructions—Continued

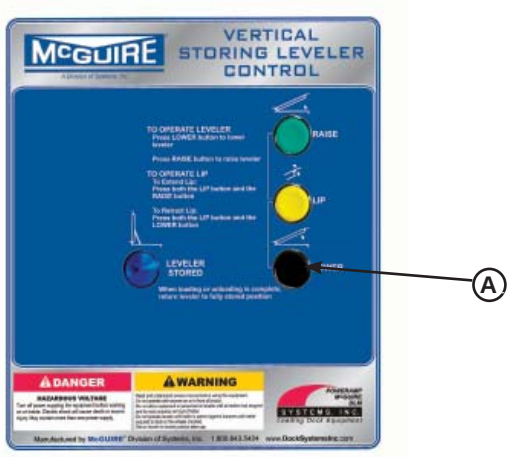
Ramp Loading/Unloading Instructions

NOTE: If end unloading is required, see End Loading/Unloading Instructions on page 21.

1. Check to make sure transport vehicle is positioned squarely against dock bumpers.

2. Instruct driver to remain at the dock until the loading or unloading process has been completed.

3. Chock the transport vehicle wheels or use the vehicle restraint if available.

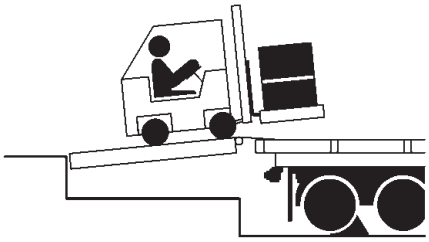


A—LOWER Button

4. Lower the platform lip onto transport vehicle as follows:

   a. Lower platform by pushing and holding LOWER button.

   b. Make sure that the lip is fully extended and supported on the transport vehicle along the entire width of the platform with at least 4 in. (102 mm) of lip contacting the transport vehicle bed.



5. Proceed with loading or unloading the transport vehicle.

6. If end loading is necessary, see End Loading/ Unloading Instructions on page 21.

B—RAISE Button **C—STORED Light**

7. When loading or unloading is finished, raise the platform by pushing and holding RAISE button. When fully raised the leveler will shut off and the Blue stored light will come on.

8. Remove chocks from transport vehicle wheels or release the vehicle restraint if used.

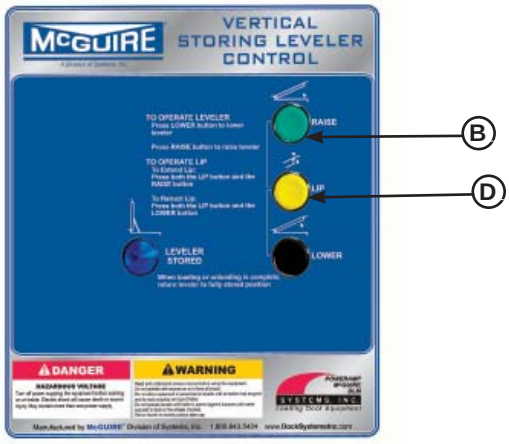
9. Indicate to driver that transport vehicle may leave the dock.

End Loading/Unloading — Platform at Cross-Traffic Position.

Operating Instructions—Continued

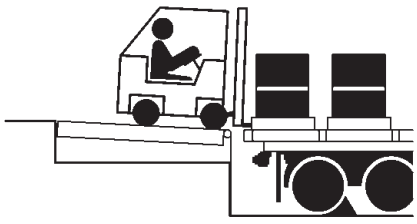
Below Dock End Loading/Unloading Instructions

1. Check to make sure the transport vehicle is positioned squarely against dock bumpers.
2. Instruct driver to remain at the dock until the loading or unloading process has been completed.
3. Chock the transport vehicle wheels or use the vehicle restraint if available.
4. Lower platform and lower the lip.
   Lower platform until the legs on the bottom of the leveler makes contact with the pit floor.



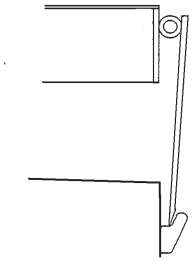
5. Proceed with loading or unloading.

B—RAISE Button **D—LIP Button**



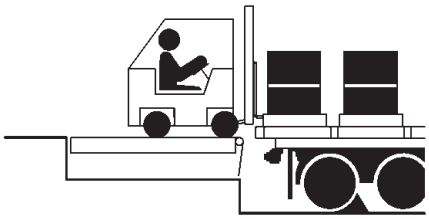
End Loading/Unloading — Platform at Below-Dock Position.

Dock Leveler Loading/Unloading Instructions

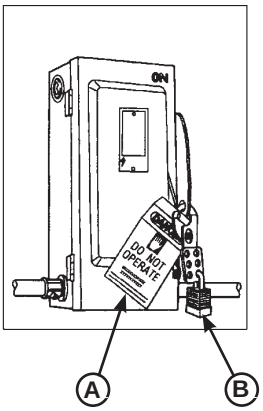


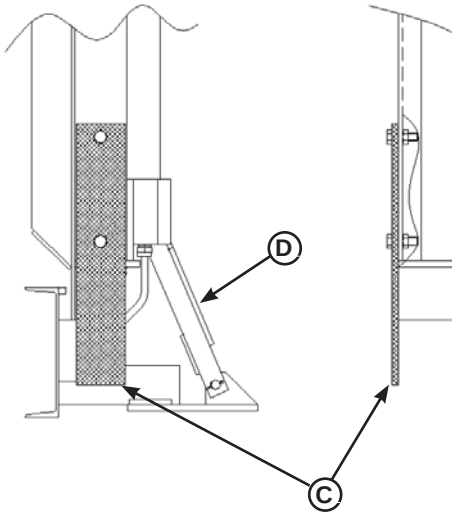
NOTE: Optional Lip Keepers

1. Check to make sure transport vehicle is positioned squarely against dock bumpers.
2. Instruct driver to remain at the dock until the loading or unloading process has been completed.
3. Chock the transport vehicle wheels or use the vehicle restraint if available.
4. Lower platform and lower lip until lip makes contact with the Lip Keepers.
5. Proceed with loading or unloading.



Service Dock Leveler Safely





A— Tagout Device **B — Lockout Device** **C —Maintenance Props** **D — Storage Prop**

WARNING

When service under the dock leveler is required, always lock all electrical disconnects in the OFF position after raising the platform and engaging the maintenance prop. Failure to do this may result in serious personal injury or death.

WARNING

Always stand clear of the dock leveler lip when working in front of the dock leveler.

The maintenance prop MUST be in the service position when working under the dock leveler. For maximum protection, use an OSHA approved locking device to lock the maintenance prop in the service position. Only the person servicing the equipment should have the key to unlock the maintenance prop.

Unless the dock leveler is equipped with a tethered remote, two people are required to engage the maintenance prop: one person to operate the unit, the other person to engage the maintenance prop.

Failure to follow these instructions may result in serious personal injury or death.

WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete. Failure to do this may result in serious personal injury or death.

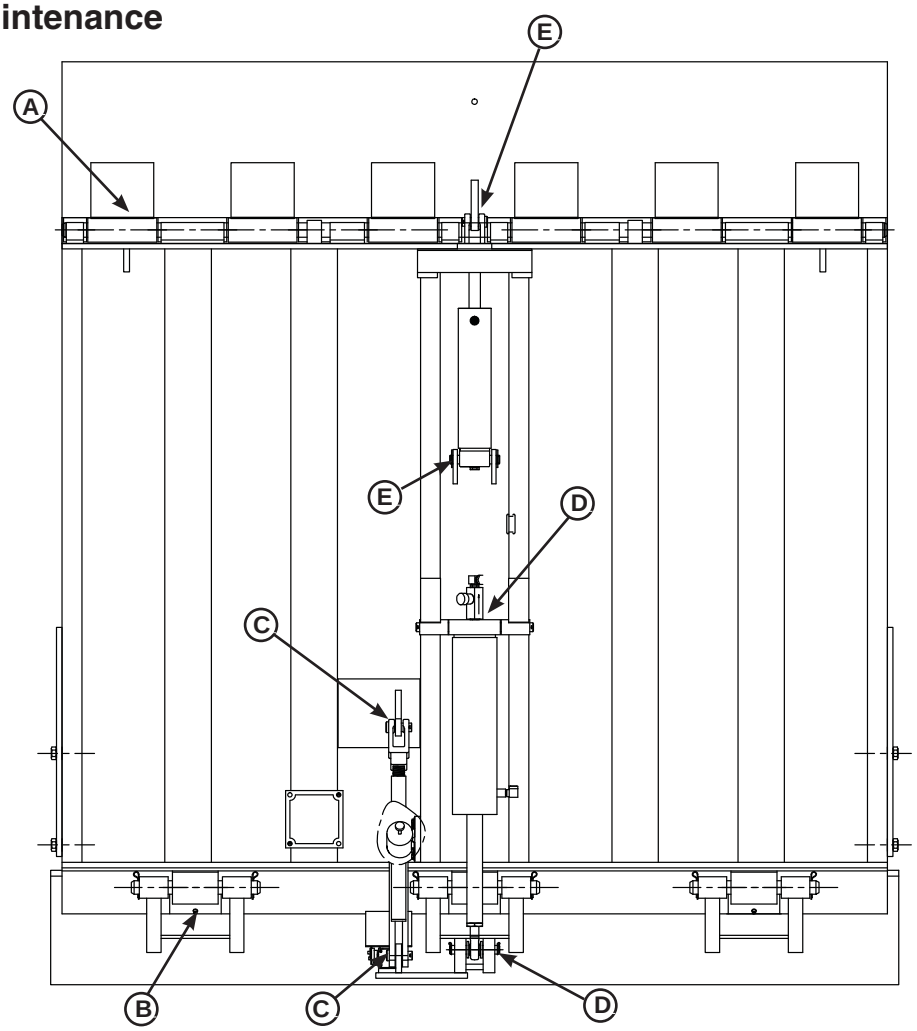
When maintenance is to be performed on the dock leveler, First install the SAFETY bolt in the storage prop (D). Second support the platform with maintenance props (C). Caution: The lip may fold down after the platform has rested on the maintenance prop.

Whenever servicing the dock leveler, lock the electrical power disconnect in the OFF position. Use only an OSHA approved lockout device* (B) and tagout device (A).

Only the person servicing the equipment should have the capability to remove the lockout devices. The tagout devices* must inform that repairs are in process and clearly state who is responsible for the lockout condition.

* Refer to OSHA regulation 1910.146.
* Refer to OSHA regulation 1910.147.

Periodic Maintenance



A— Lip Hinge Area
B— Platform Pins
C— Storage Prop
D— Hoist Cylinder
E— Lip Cylinder

Pump and reservoir not shown for clarity

⚠ WARNING

Before performing any maintenance under the dock leveler, lock the electrical power source in OFF position and lock the maintenance prop in the service position using an approved locking device. (See Service Dock Leveler Safely in this section.)

Failure to follow these instructions may result in serious personal injury or death.

IMPORTANT

Use of fluids that do not have equivalent specifications to those in the following list will result in abnormal operation of the dock leveler and voiding of warranty.

To ensure normal operation of the dock leveler, use only **Aircraft Hydraulic Fluid** designed to **meet or exceed military specification MIL-H-5606-G**. It is recommended that the following hydraulic fluids be used:

- Ultra Vis Hvi 15
- Aero Shell Fluid 4 or Fluid 41
- Mobile Aero HFA Mil-H5606 G or Aero HF
- Texaco Aircraft Hydraulic Oil 15 or 5606
- Exxon Univis J13

These fluid brands can be mixed together. Mixing with fluids that do not meet or exceed MIL-H-5606-G may damage the equipment and WILL void warranty. Use of hydraulic fluids with equivalent specifications to those listed here are acceptable.

MAINTENANCE

Regular maintenance must be performed on a weekly and quarterly schedule.

Weekly Maintenance

- Operate the dock leveler through the complete operating cycle to maintain lubrication.

NOTE: Make sure the limit switch is clear of debris.

- Inspect the platform hinge and the lip hinge areas. The hinge areas must be kept free of dirt and debris. Build-up of foreign material in the hinge areas will cause abnormal operation.

IMPORTANT
Failure to properly lubricate the dock leveler will cause abnormal operation of the leveler.

Quarterly Maintenance

Include Weekly Maintenance

- Lubricate the following areas with light weight machine oil:

  (A)— Lip hinge area unless equipped with grease fittings (apply oil to the top of the entire length of lip hinge when platform is in the stored position and lip is folded)

  (B)— Platform hinge area (apply oil to top of all platform hinges when platform is in the stored position)

  (C)— Apply a light oil to the Storage prop pins.

  (D)— Grease the hoist cylinder grease fitting

  (E)— Apply a light oil to the Lip Cylinder pins.

NOTE: Apply grease to lip hinge grease fittings if equipped.

Yearly Maintenance

- Lubricate the following areas with light weight machine oil:

  (A)— Lip hinge area unless equipped with grease fittings (apply oil to the top of the entire length of lip hinge when platform is in the stored position and lip is folded)

  (B)— Platform hinge area (apply oil to top of all platform hinges when platform is in the stored position)

  (C)— Apply a light oil to the Storage prop pins.

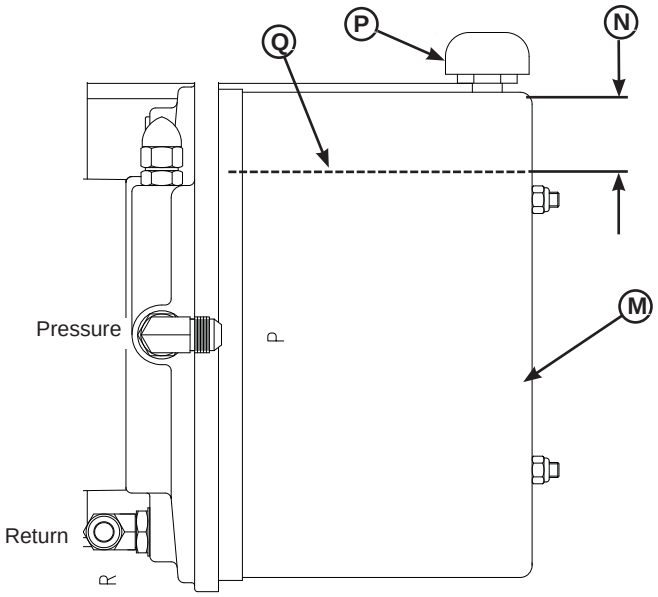
  (D)— Grease the hoist cylinder grease fitting

  (E)— Apply a light oil to the Lip Cylinder pins.

  (F)— Change hydraulic oil (may be required more often depending upon conditions)

NOTE: Apply grease to lip hinge grease fittings if equipped.

Checking Fluid Levels Reservoir on Remote Pumps



M — Reservoir
N — 2 in. (51 mm) (From Top of Reservoir)
P — Breather Cap
Q — Fluid Level

IMPORTANT

A low fluid level or the use of hydraulic fluids not equivalent to the fluid types recommended, will cause abnormal operation of the leveler and WILL void warranty.

- Check reservoir fluid level (Q):

1. The leveler must be in the stored position with the lip lowered.
2. Turn OFF all electrical power to the leveler.
3. Remove breather cap (P).
4. Measure fluid level. The fluid level should be approximately 2 in. (51 mm) (N) from top of reservoir (M) with platform stored and the lip in the flooded position.
5. Add hydraulic fluid if necessary. Use only recommended fluid. (Pg. 23)
6. Install breather cap.
7. Turn ON electrical power to the leveler.
8. Return the lip to the raised position.

Main Pressure Relief

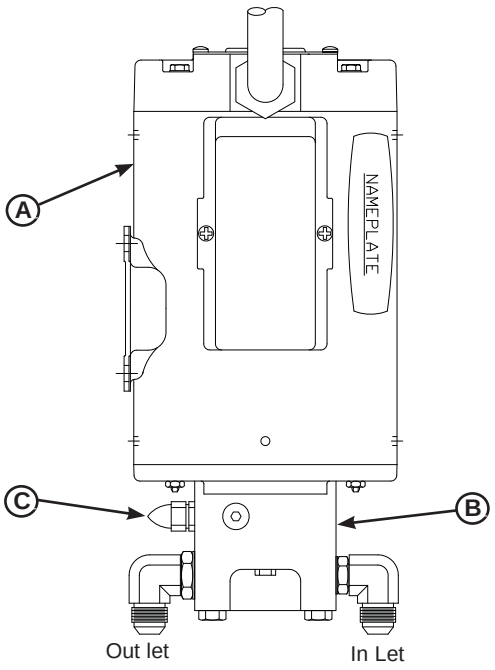
WARNING

When service under the dock leveler is required, always lock all electrical disconnects in the OFF position after raising the platform and engaging the maintenance prop. Failure to do this may result in serious personal injury or death.

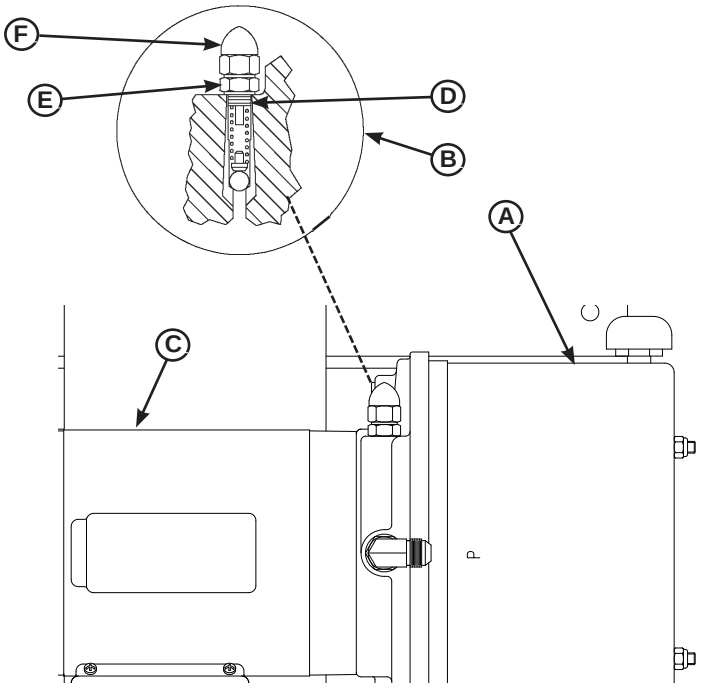
WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete. Failure to do this may result in serious personal injury or death.

The pressure relief on the SC and remote PPACs are not adjustable. Consult Factory.



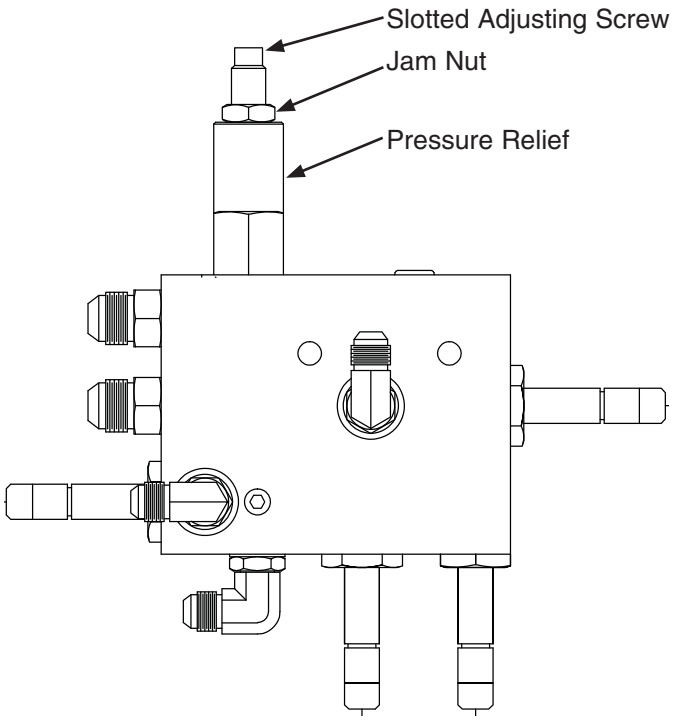
A— Motor B— Pump C— Main Pressure Relief

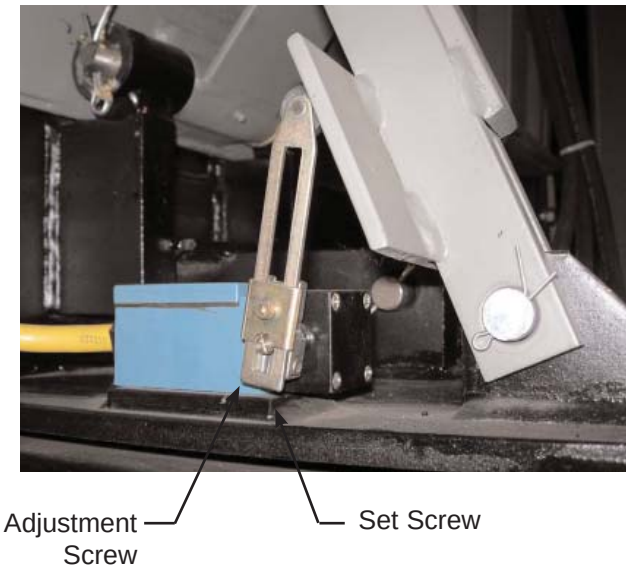


A— Reservoir
B— Main Pressure Relief
C— Pump/Motor
D—Hex Adjusting Screw
E— Jam Nut
F— Acorn Nut

Adjust Main Pressure

1. The leveler must be in the stored position and the maintenance prop in the service position.
2. Turn OFF all electrical power to the dock leveler. Attach safety lockout and tagout devices.
3. Loosen jam nut (F).
4. Adjust slotted head adjusting screw (D) as follows:
   - Turn clockwise to increase pressure relief.
   - Turn counterclockwise to decrease pressure relief.
6. While holding the adjusting screw tighten jam nut.
7. Turn ON electrical power to the dock leveler.
8. Check leveler operation.
9. Repeat steps 1– 8 as necessary.





Stored Limit Switch Adjustment

1. Loosen Set Screw

2. With roller arm contacting storage prop, rotate adjustment screw counter clockwise until a “Click noise is heard.

3. Tighten set screw head cap screw.

4. Readjust as needed to leveler allow to store 5 Degrees from vertical leaning away from the operator.

5. After adjusting the stored limit switch check for correct play in the prop.

Down Speed Control Adjustment

If the dock leveler lowers to slow, the down speed control, requires adjustment. The speed control adjusting screw (A) The set screw is located on the hoist cylinder (B), directly above hoist cylinder and below the upper hose.

The Down speed flow control is pre set at 1-1/2 turns out from fully closed.

To adjust the speed control:

a. Loosen the allen head set screw.

b. To decrease the lowering speed, turn knurled knob screw (A) clockwise.

c. To increase the lowering speed, turn knurled adjusting screw (A) counterclockwise.

d. Tighten the set screw when once desired down speed has been set.

Storage Prop Adjustment

Maintenance Prop Adjustments

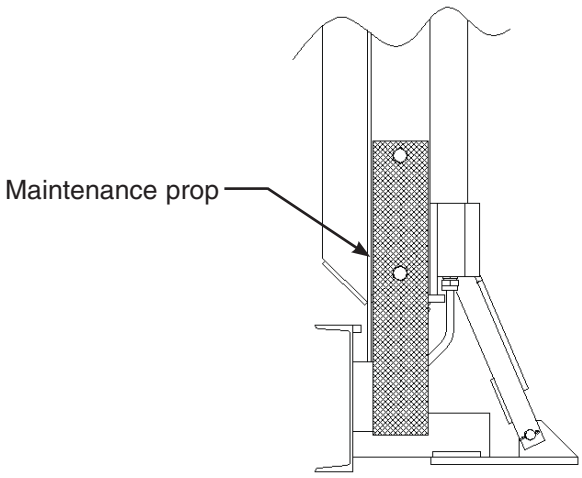
1. Raise platform fully and engage the storage prop in the service position (If dock leveler has not been used recently cycle leveler once).
2. Turn OFF all electrical power to the dock leveler. Attach safety lockout and tagout devices.
3. Lower maintenance props.
4. Adjust yoke on the storage prop till you have minimum 1/2“ of free play in the prop”.
5. When the free play is adjusted check the amount of threads exposed in the yoke. If more 1-1/2 threads exposed the thread rod of the storage prop must be shorted.
6. Raise maintenance props.
7. Turn on electrical power remove lockout tagout devices.

⚠ WARNING

When service under the dock leveler is required, always lock all electrical disconnects in the OFF position after raising the platform and engaging the maintenance prop. Failure to do this may result in serious personal injury or death.

⚠ WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete. Failure to do this may result in serious personal injury or death.



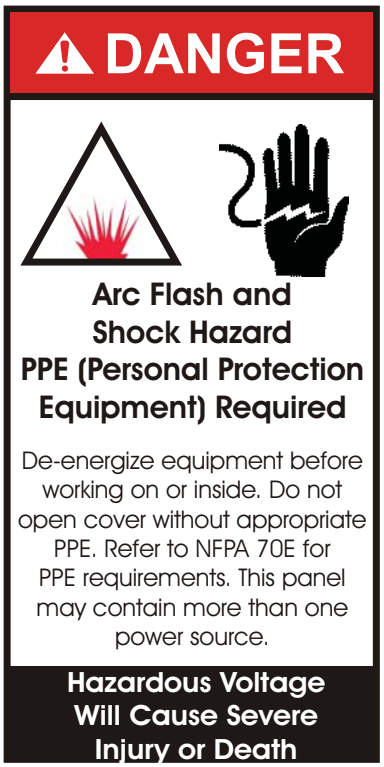
Troubleshooting

WARNING

When service under the dock leveler is required, always lock all electrical disconnects in the OFF position after raising the platform and engaging the maintenance prop. Failure to do this may result in serious personal injury or death.

WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete. Failure to do this may result in serious personal injury or death.



Before performing the detailed troubleshooting procedures, check the following items first:

- Check all fuses inside the control panel(s). Replace any blown fuse(s) with a fuse of equal specification.
- Make sure the correct voltages are present at the proper locations inside the control panel(s).

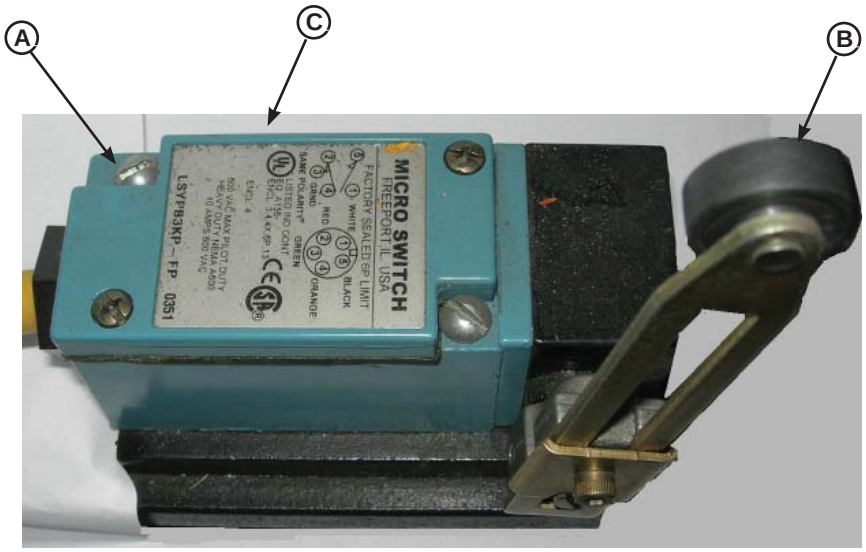
Symptom	Possible Cause	Solution
Platform does not rise or lower. Motor does not energize.	Motor overload device tripped or fuse blown.	Reset overload relay (three-phase) or replace fuse(s) (single-phase). Determine cause of overload. *NOTE: When replacing fuse(s), the new fuse must have the same specification as the old fuse.*
	Motor starter (three-phase) or motor relay (single-phase) not energizing.	Check voltage at starter or relay coil. • If voltage is present and starter or relay does not energize, replace starter or relay. • If voltage is not present, check all components in series with the starter or relay coil.
Three-phase units only: Platform does not rise or lower. Motor hums, but does not run.	No voltage is present on one line. *NOTE: A motor that is missing voltage on one line is said to be single-phased.*	Check for blown fuses at branch circuit disconnect. Replace fuse. Determine cause of blown fuse.
		Check motor starter as follows: 1. Disconnect wires at load side of starter. 2. Energize the starter. 3. Measure line-to-line voltage at line side of starter. 4. Measure line-to-line voltage at load side of starter. 5. Line-side and load-side voltages should be approximately the same. Replace starter if voltage values are considerably different from one another.
		Check all wiring to motor for high resistance or no connection.
Three-phase units only: Platform does not rise. Motor runs in reverse	Phase reversed.	Reverse any two legs at the branch circuit disconnect.
Single-phase units only: Platform does not rise or lower. Motor energizes, but does not run.	Line voltage too low.	Check wiring to motor for high resistance. Check for loose or corroded connections. Check if gauge of wires to motor are of correct size and specification for load requirement. Replace if necessary.
	Defective motor centrifugal switch.	Replace motor.
	Defective motor capacitor.	Replace motor.

TROUBLESHOOTING

Symptom	Possible Cause	Solution
Platform does not rise. Pump operates in pressure relief mode.	Heavy object(s) on platform.	Remove object(s) from platform. *NOTE: For safety reasons, the dock leveler is designed to lift only the platform's own weight.*
	Dock leveler binds.	Check for visible obstructions that could cause binding. Remove obstructions. If no obstructions found, call Technical Services. See inside back cover for phone number and address.
	Pressure relief set too low.	Increase pressure relief. See Adjust Main Pressure Relief in the Adjustment section. *NOTE: The pressure relief valve must not be set at a level that causes the motor operating current to exceed the full load amp value* at any time, including when operating in pressure relief.* ** The full load amp value can be found on the inside cover of the control panel.*
Platform rises slowly.	Low hydraulic fluid.	Add fluid as needed. See Periodic Maintenance in the Maintenance section.
	Contaminated hydraulic system.	Clean and inspect valves. Flush contaminated oil from hydraulic system. Fill system with new oil. See Periodic Maintenance in the Maintenance section.
	Damaged or restricted hydraulic hose(s).	Replace damaged hose(s). Remove restriction.
	Pressure relief set too low.	Increase pressure relief. See Adjust Main Pressure Relief in the Adjustment section. *NOTE: The pressure relief valve must not be set at a level that causes the motor operating current to exceed the full load amp value* at any time, including when operating in pressure relief.* ** The full load amp value can be found on the inside cover of the control panel.*
Pump motor loads down when platform starts to raise from the lowered position.	Pressure relief set too high.	Decrease pressure relief. See Adjust Main Pressure Relief in the Adjustment section. *NOTE: The pressure relief valve must not be set at a level that causes the motor operating current to exceed the full load amp value* at any time, including when operating in pressure relief.* ** The full load amp value can be found on the inside cover of the control panel.*

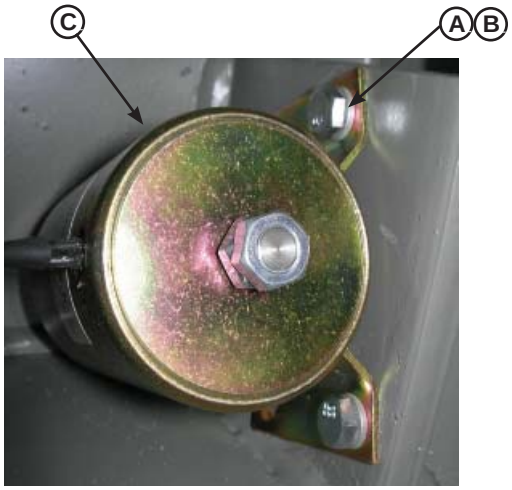
Symptom	Possible Cause	Solution
Platform does not rise to full height.	Low hydraulic fluid.	Add fluid as needed. See Periodic Maintenance in the Maintenance section.
Platform does not rise.	Coil energized on the float coil.	Remove wire of terminal strip to the float coil, If leveler raises possible bad PLY or relay
	Bad spool valve.	Remove and clean spool valve or replace with new or good working valve.
Platform Does not rise to full height.	Low hydraulic fluid.	Add fluid as needed. See Periodic Maintenance in the Maintenance section.
	In correct adjustment on the Limit switch.	Adjust the limit switch so the plate form leans 5 deg toward the door (see adjustments) .
Lip does not extend.	“C” Coil not energized	Check power to the spool valve should have a magnetic pull when energized (Pump Motor must be running)
	Bad spool valve.	Remove and clean spool valve or replace with new or good working valve(Pump Motor should not be running).
Lip does not lower.	“C”, “D” and “E” Coils not energized	All three valves must be energized. Check power to the all spool valves they should have a magnetic pull (Pump Motor must be running).
	Bad spool valve.	Remove and clean spool valves or replace with new or good working valves.(Pump Motor must be running)
Platform does not lower.	Blue stored light not on.	Limit switch not adjusted correctly (see adjusts page 28). Possible bad switch stored limit switch
Leveler pump runs but Platform does not lower.	Prop kicker does not kick.	Possible prop kicker Solenoid not working. Possible Mercury switch not working.
Leveler pump runs prop kicker works but Platform does not lower.	Storage Prop	Not enough Free play in the storage prop (see page 29).
Leveler pump runs prop kicker works but Platform does not lower.	“D” and “E” Coils not energized	Both valves must be energized. Check power to the all spool valves they should have a magnetic pull (Pump Motor must be running).
	Bad spool valve.	Remove and clean spool valves or replace with new or good working valves.(Pump Motor must be running)

Storage Limit Switch



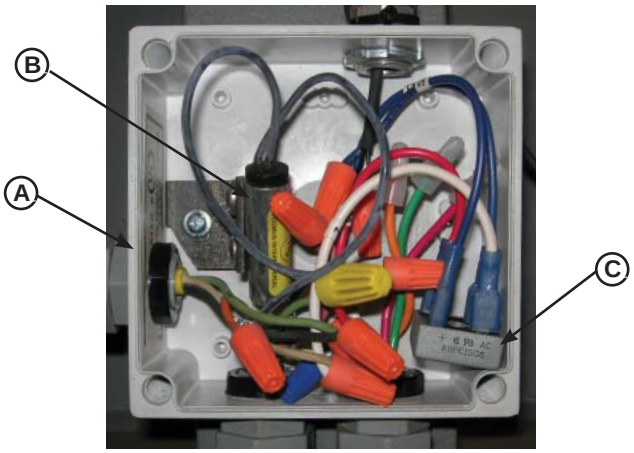
Item	Quantity	Part Number	Description
A	2	2101-0027	Screw #10-32 UNF x 1.75 Lg
B	1	0961-0130	Arm, Limit Switch
C	1	0961-0186	Limit Switch

Solenoid Prop Kicker



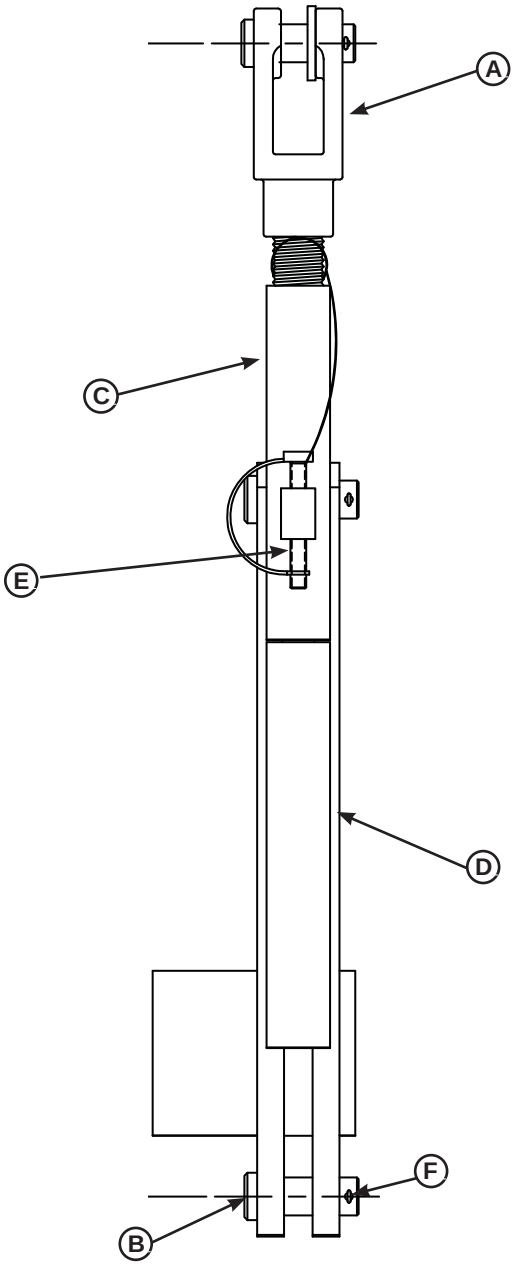
Item	Quantity	Part Number	Description
A	3	2101-0153	Bolt 1/4 UNC 1/2 Lg.
B	3	2101-0005	Washer, Lock 1/4
C	1	8581-0023	Solenoid Prop Kicker

J-Box



Item	Quantity	Part Number	Description
A	1	2751-0042	J Box Fiber Glass 5” x 5“ (Includes Cover)
B	1	0961-0054	Mercury Switch
C	1	3051-0025	Rectifier Bridge

Storage Prop Assembly



Item	Quantity	Part Number	Description
A	1	9222-0097	Yoke, Upper Arm Prop
B	3	0522-0005	Clevis Pin 3/4 Dia x 2-2/4 Lg.
C	1	**	Upper Weldment
D	1	**	Lower Weldment
E	1	9201-0006	Prop lock Pin and Clip
F	3	2101-0047	Cotter Pin
H	1	9225-0016	Storage Prop Assembly

** Not Sold Separate

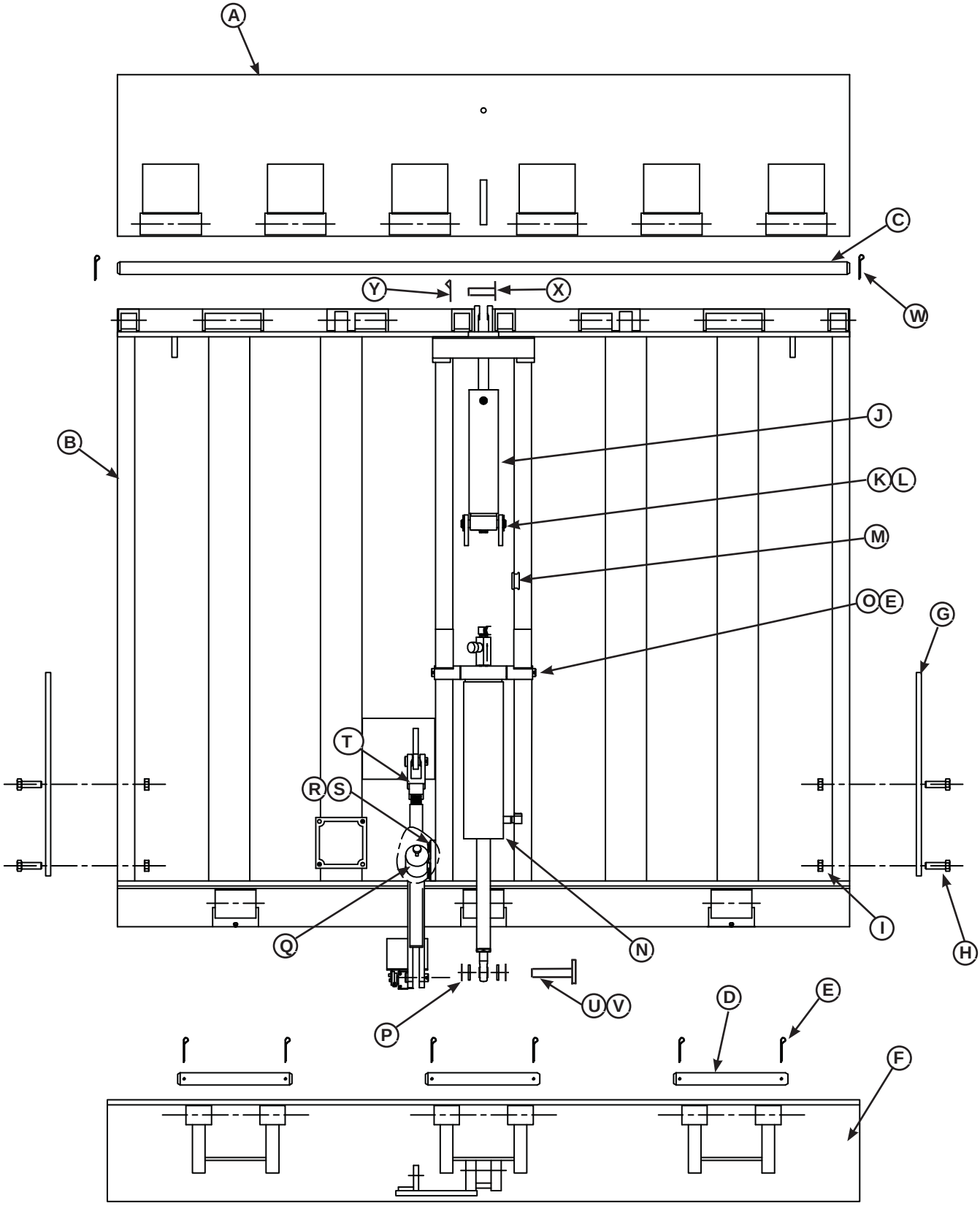
Lip and Platform

See drawing on page 38

VERTICAL LIPS				
	6’ WIDE	40K W/O Gussets	40/45K WO Gussets	50K W/Gussets
A	16”	0595-0387	0595-1107	0595-1107
	18”	0595-0388	0595-1108	0595-1108
	20”	0595-0389	0595-1109	0595-1109
	6.5’ WIDE			
	16”	0595-0390	0595-1110	0595-1110
	18”	0595-0391	0595-1111	0595-1111
	20”	0595-0392	0595-1112	0595-1112
	7’ WIDE			
	16”	0595-0393	0595-1113	0595-1113
	18”	0595-0394	0595-1114	0595-1114
	20”	0595-0395	0595-1115	0595-1115

VERTICAL PLATFORMS				
	6’ WIDE	40K W/O Gussets	40/45K WO Gussets	50K W/Gussets
B	5	9515-0843	9515-1077	9515-1121
	6	9515-0844	9515-1074	9515-1124
	8	9515-1065	9515-1071	CALL
	6.5’ WIDE			
	5	9515-0845	9515-1078	9515-1122
	6	9515-0846	9515-1075	9515-1125
	8	9515-1066	9515-1072	CALL
	7’ WIDE			
	5	9515-0849	9515-1079	9515-1123
	6	9515-0848	9515-1076	9515-1126
	8	9515-1067	9515-1073	CALL

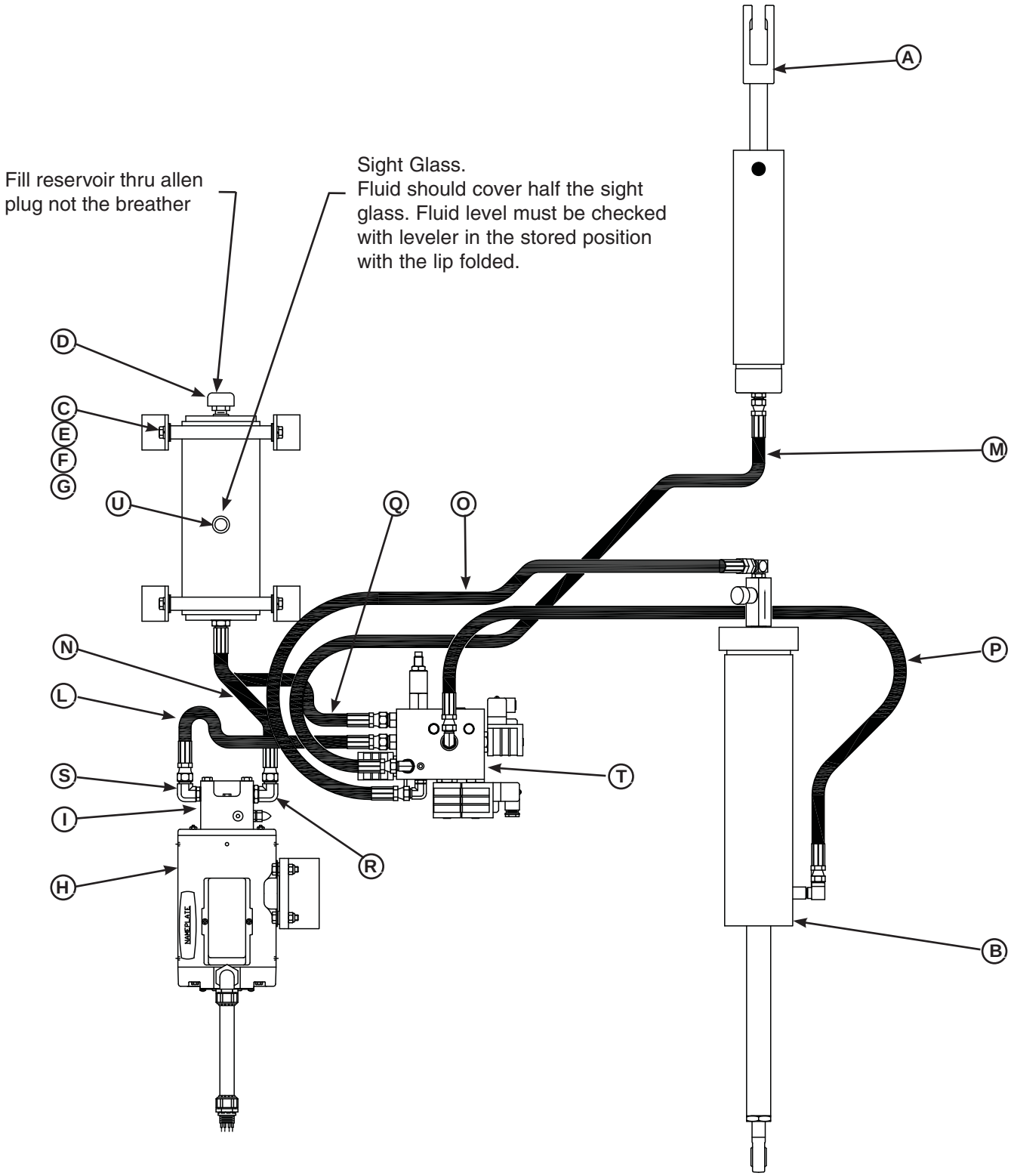
Lip and Platform



Pump and reservoir not shown for clarity

Item	Quantity	Part Number	Description
A	1	See Table page 37	Lip, Weldment
B	1	See Table page 37	Platform, Welded Assembly
C	1	9202-0050	Pin, Lip Hinge 6'W
		9202-0051	Pin, Lip Hinge 6.5'W
		9202-0052	Pin, Lip Hinge 7'W
		9202-0053	Pin, Lip Hinge 6'W, SS
		9202-0054	Pin, Lip Hinge 6.5'W, SS
		9202-0055	Pin, Lip Hinge 7'W, SS
D	3	9202-0040	Rear Hinge Pin
		9202-0041	Rear Hinge Pin Stainless Steel
E	8	2101-0245	Cotter Pin
F	1	9515-____[1]	Imbed - Call
G	2	9222-0221	Maintenance Prop
H	4	2101-0262	Bolt 5/8-11 UNC X 1.75 Grade 8
I	4	2101-0042	Nut 5/8-11 UNC Grade 5
J	1	0525-0085	Lip Cylinder
K	1	9202-0004	Pin - Lip Cyl. 3/4 Dia. x 4-3/8 Lg.
L	2	2101-0049	Hairpin Clip
M	1	2401-0004	Grommet
N	1	0525-0066	Hoist Cylinder
O	1	9202-0038	Pin - Hoist Cyl. 49/64 Dia.10-1/4 Lg.
P	4	2101-0093	Washer, flat, 3/4
Q	1	8581-0023	Prop Kicker
R	4	2101-0153	Hex Head Cap Screw, 1/4-20 UNC x 1/2 Lg.
S	4	2101-0005	Washer, 1/4 in., Lock
T	2	9225-0016	Storage Prop
U	1	9202-0067	Hoist Cyl Pin Rod End
V	1	2101-0259	Ring Clip, Rue
W	2	2101-0046	Cotter Pin
X	1	0522-0005	Clevis Pin
Y	1	2101-0045	Cotter Pin

SC Vertical Leveler Hydraulic Components



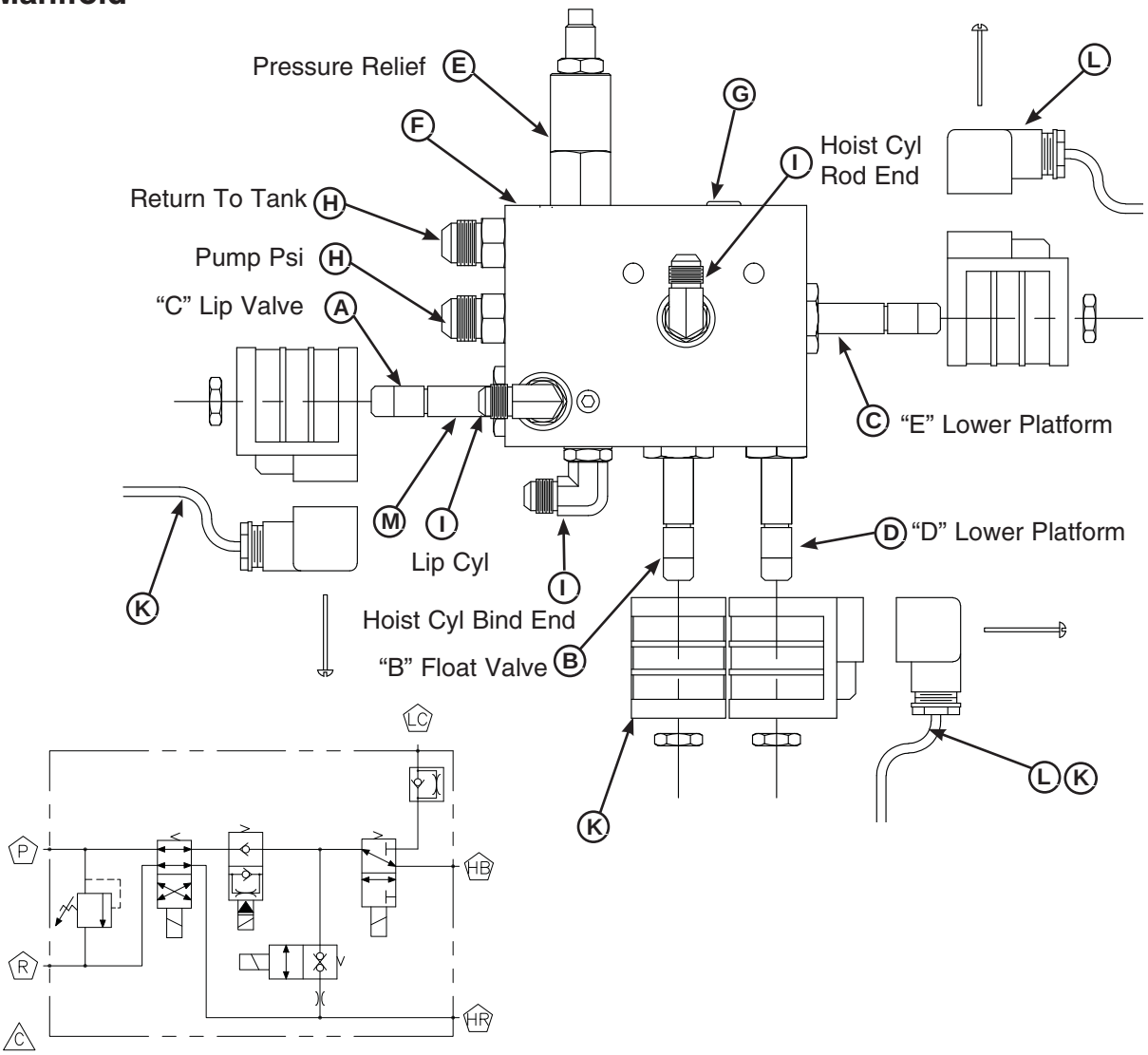
SC Vertical Leveler Hydraulic Components

Item	Quantity	Part Number	Description
A	1	0525-0085	Lip, Cylinder
B	1	0525-0066	Hoist Cylinder 10” and 12” Pits
		0525-0104	Hoist Cylinder 15” Pits
C	1	9394-0024	Reservoir Short (5’-6’ Lg) Includes Hoses 9904-0102 & 9904-0103
		9394-0053	Reservoir Long (8’ Lg) Includes Hoses 9904-0102 & 9904-0103
D	1	9301-0199	Breather, Reservoir
E	4	21010011	Hex Head Capscrew
F	4	2101-0058	Lock Washer
G	4	2101-0060	Flat Washer
H	1	9394-0014	Motor Assembly 115V 1 Ph
		9394-0015	Motor Assembly 460V 3 Ph
		9394-0033	Motor Assembly 208V 1 Ph
		9394-0034	Motor Assembly 230V 1 Ph
		9394-0035	Motor Assembly 575V 3 Ph
		9394-0043	Motor Assembly 208V 3 Ph
		9394-0044	Motor Assembly 230V 3 Ph
I	1	9301-0132	Pump 1.75Gpm
L	1	9904-0090	Hose, 17.50” Lg, #8 Jic Swivel Both Ends (5’-6’ LG)
M	1	9904-0059	Hose, 35.00” Lg, #6 Jic Swivel Both Ends (8’ LG)
	1	9904-0137	Hose, 60.00” Lg, #6 Jic Swivel Both Ends
N	1	9904-0103	Hose, 10.50” Lg, #8 ORB to #8 Jic Swivel
O	1	9904-0059	Hose, 35.00” Lg, #6 Jic Swivel Both Ends
P	1	9904-0083	Hose, 44.50” Lg, #6 Jic Swivel Both Ends
Q	2	9904-0102	Hose, 21.00” Lg, #8 ORB to #8 Jic Swivel
R	1	9301-0115	Fitting 90 Deg #6 ORB To #8 Jic
S	1	9301-0116	Fitting 90 Deg #8 ORB To #8 Jic
T	1	8585-0089	Vertical Valve Assembly
U	1	9301-0203	Site Glass

[1] Provide dock leveler serial number, platform size, and lip size when calling or faxing orders.
[2] Provide length and width of inspection plate opening when calling or faxing orders.

PARTS

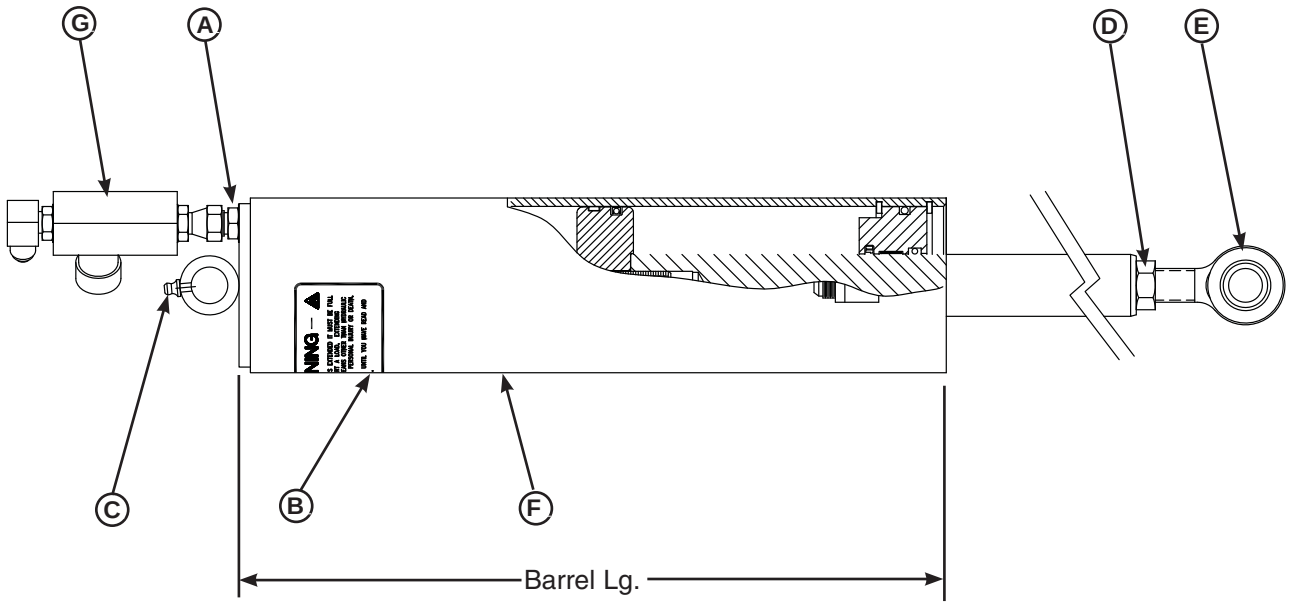
VS Manifold



Item	Quantity	Part Number	Description
A	1	8581-0005	Valve Cartridge 3-Way Delta
B	1	8581-0102	Valve Cartridge 2-Way Bi-Dr Delta
C	1	8581-0011	Valve Cartridge 4-Way 2 Pos Delta
D	1	8581-0010	Valve Cartridge 2-Way N.C. Poppet Delta
E	1	8581-0105	Valve Cartridge Relief
F	1	**	Valve Manifold
G	1	**	Fitting Plug
H	2	9301-0111	Fitting #6 ORB X #8 Jic
I	3	9301-0113	Fitting 90 Deg #6 ORB X #6 Jic
J	4	8581-0004	Delta Coil 115V (Includes 1/2 UNF Jam Nut)
K	2	4301-0001	Cable Assy, 48" Lg (Includes Screw)
L	2	4301-0003	Cable Assy, 48" Lg (Includes Screw) Two Coil
M	1	8581-0139	Orifice Check (Lip Flow Control)
*N	1	8585-0089	Vertical Valve Assembly

* A-I & M Included in 8583-0089
** Not Sold Separate

Platform Cylinder Repair Parts

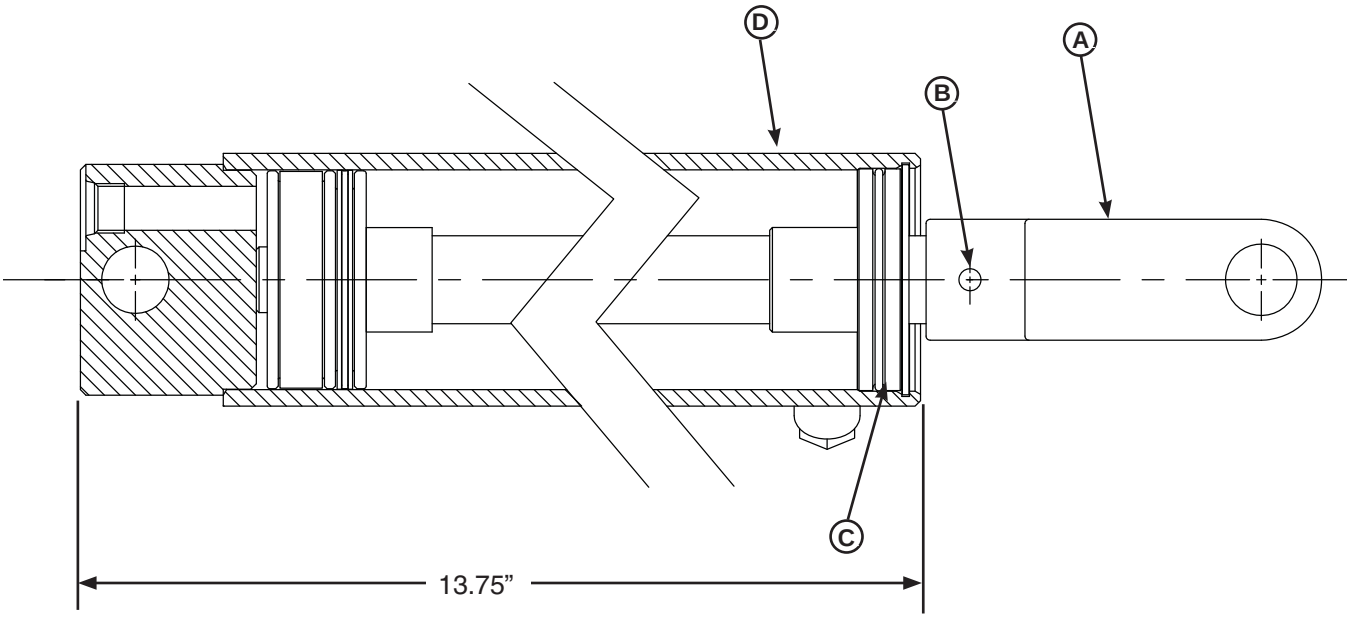


Item	Quantity	Part Number	Description
A	1	9301-0109	Fitting Connection Str. Thread 90 DEG Male
B	1	1751-0138	Decal
C	1	0521-0073	Grease Zerk
D	1	2101-0162	Hex Nut
E	1	9461-0002	Rod End
F	1	0525-0066*	Hoist Cylinder 10” and 12” Pits (15-3/4” Barrel Lg.) (Includes A-E)
	1	0525-0104*	Hoist Cylinder 15” Pits (23” Barrel Lg.) (Includes A-E)
G	1	9303-0025	Down Speed Control Valve Assy

Note:
No seal kit is available for this cylinder

*Provide dock leveler serial number when calling or faxing orders.
**(Not Sold Separately)

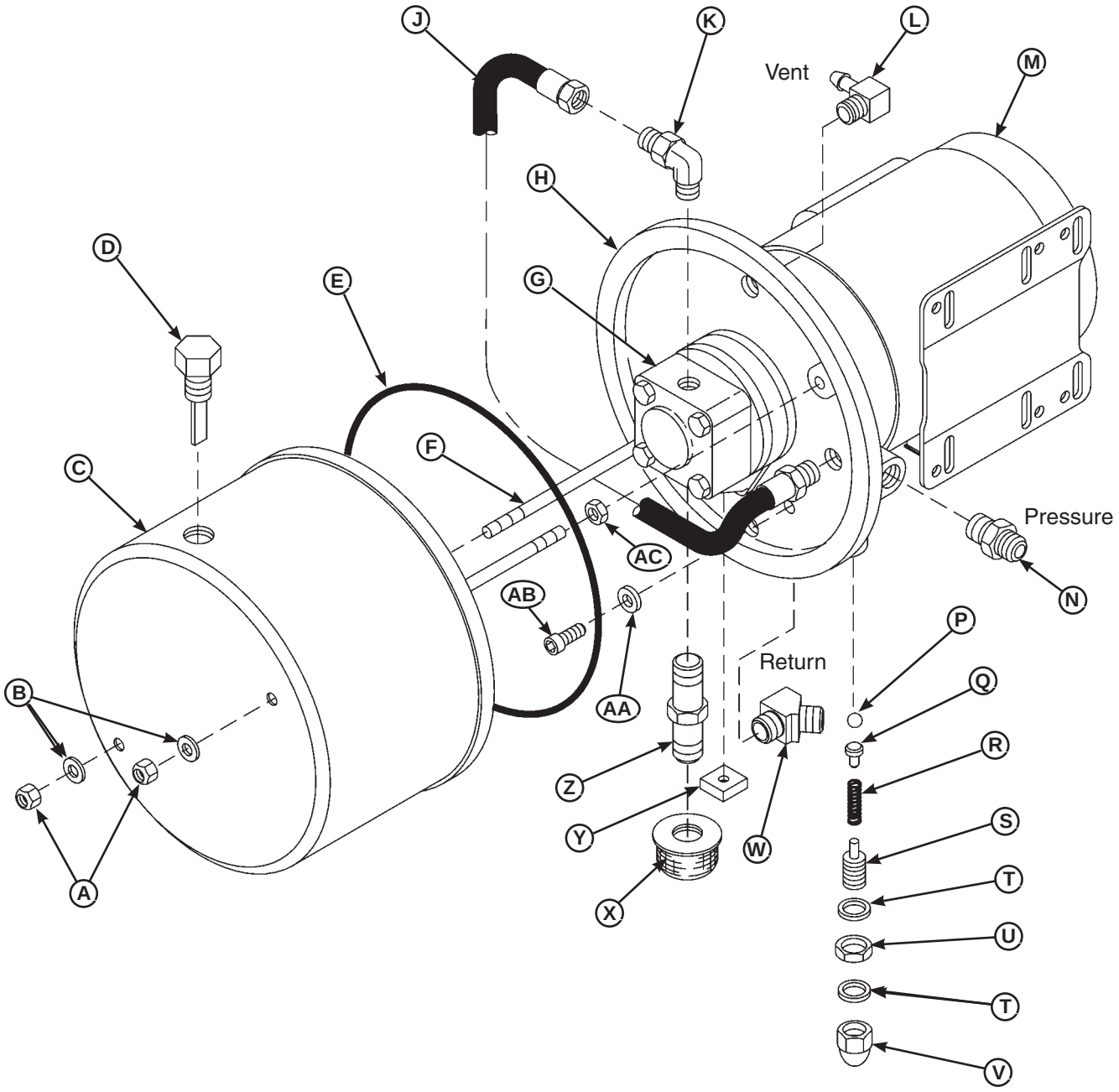
Lip Cylinder Repair Parts



Item	Quantity	Part Number	Description
A	1	0522-0156	Yoke (included in 0525-0085)
B	1	0521-0005	Roll pin (included in 0525-0085)
C	1	0525-0014	Seal Kit 1992 and earlier
		0525-0059	Seal Kit 1992 and Newer
D	1	0525-0085	VS Lip Cylinder

*Provide dock leveler serial number when calling or faxing orders.
**(Not Sold Separately)

Remote Mount Power Pack Assembly



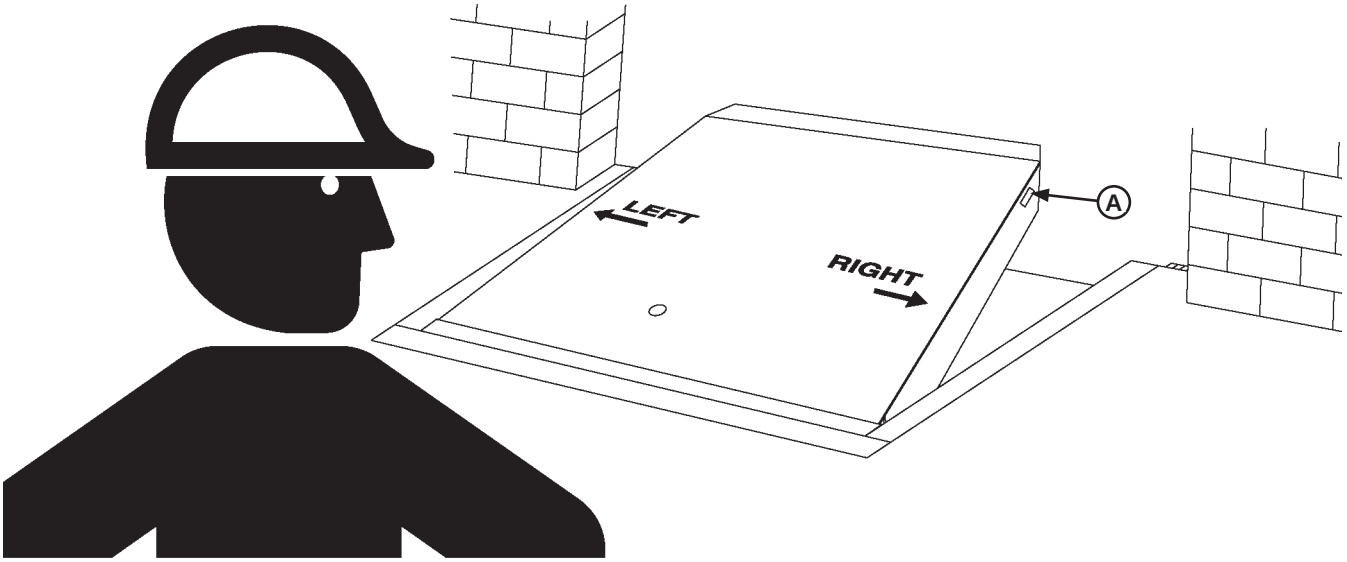
Power Pack Assembly

Item	Quantity	Part Number	Description
A	2	2101-0039	Nylon Lock Nut, 5/16-18 UNC
B	2	9301-0029	Seal, Thread
C	1	9302-0014	Reservoir
D	1	9301-0199	Breather Cap, 3/8 NPT Male
E	1	9301-0027	O-Ring (Reservoir)
F	2	9302-0012	Tie Rod (Reservoir)
G	1	9301-____ [1]	Pump Only
	4	2101-0039	Cap Screw, 5/16-18 UNC x 3-1/2 in., Grade 5
	1	9301-0028	Gasket, Pump
	1	9303-0002	Coupling Assembly
H	1	9302-0017	Plate, Drive
J	1	9904-0001	Hose
K	1	0521-0017	90° Elbow, 3/8 NPT Male x #8-JIC Male
L	1	0521-0007	90° Elbow, 1/4 NPT Male x 1/4 Tube
M	1	3411-____ [2]	Motor Only
N	1	0521-0015	Straight Fitting, 3/8 NPT Male x #8-JIC Male
P	1	0521-0014	Ball, Check
Q	1	9301-0024	Guide, Check Ball
R	1	9302-0009	Spring, Relief Valve
S	1	9303-0003	Screw, Adjusting
T	2	9301-0014	Washer, Nylon, 11/16 in. OD x 1/2 in. ID
U	1	9301-0015	Nut, Jam, 1/2-20 UNF
V	1	9301-0016	Nut, Acorn, 1/2-20 UNF
W	1	0521-0016	45° Elbow, 3/8 NPT Male x #8-JIC Male
X	1	9301-0009	Strainer, Suction
Y	1	9301-0082	Magnet
Z	1	9301-0008	Pipe Nipple, 3/8 NPT x 3 in.
AA	2	9301-0003	Washer, Aluminum, 9/16 in. OD x 3/8 in. ID x 1/16 in.
AB	2	9301-0004	Screw, Socket Head, 3/8-16 UNC x 1-3/4 in.
AC	2	2101-0063	Nut, Jam 5/16-18 UNC
	1	9395-____ [1]	Power Pack Complete (Includes All Items Except L, N, and W)

[1] Provide dock leveler serial number and type of installation when calling or faxing orders.
[2] Provide dock leveler serial number, voltage, and phase when calling or faxing orders.

NOTES

Customer Information



NOTE: Refer to illustration for left/right orientation of dock leveler.

The model/serial number decal (A) is located on the right platform joist near the front (lip) of dock leveler.

When you receive your VSH dock leveler, write down the dock leveler model and serial number in the form provided. This will help ensure safe keeping of the numbers in the event the model/serial number decal (A) becomes lost or damaged.

Also, write down Systems, Inc.'s job number, the company that installed the dock leveler, and the original owner's name. This will all help to identify the specific dock leveler if more information is required.

When ordering, use part numbers and description to help identify the item ordered. Do not use "item" numbers. These are only for locating the position of the parts. Always give dock leveler MODEL NUMBER and/or SERIAL NUMBER.

For service, call or contact:

Systems, Inc.
P.O. Box 309
Germantown, WI 53022

Phone: (800) 643-5424
Fax: (262) 255-5917

Dock Leveler Information

Model _____

Serial No. _____

Systems, Inc., Job No. _____

Original Owner Information

Name _____

Address _____

_____

Installer Information

Name _____

Address _____

_____

Date of Installation _____

STANDARD PRODUCT WARRANTY

SYSTEMS, INC. warrants that its products will be free from defects in design, materials and workmanship for a period of one (1) year from the date of shipment. All claims for breach of this warranty must be made within 30 days after the defect is or can with reasonable care, be detected. In no event shall any claim be made more than 30 days after this warranty has expired. In order to be entitled to the benefits of this warranty, the product must have been properly installed, maintained and operated in accordance with all manufacturer's recommendations and/or specified design parameters and not otherwise have been subject to abuse, misuse, misapplication, acts of nature, overloading, unauthorized repair or modification, application in a corrosive environment or lack of maintenance. Periodic lubrication, adjustment and inspection in accordance with all manufacturers' recommendations are the sole responsibility of the Owner/User.

In the event of a defect, as determined by SYSTEMS INC., covered by this warranty, SYSTEMS INC. shall remedy such defect by repairing or replacing any defective equipment or parts, bearing the cost for the parts, labor and transportation. This shall be exclusive remedy for all claims whether based on contract, negligence or strict liability.

WARRANTY LIMITATIONS

THE ABOVE WARRANTIES ARE IN LIEU OF ANY OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SYSTEMS INC. AND ITS SUBSIDARIES SHALL NOT IN ANY EVENT BE LIABLE TO ANYONE, INCLUDING THIRD PARTIES, FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND INCLUDING BUT NOT LIMITED TO, BREACH OF WARRANTY, LOSS OF USE, LOSS OF PROFIT, INTERUPTION OF BUSINESS OR LOSS OF GOODWILL.

PRODUCT SPECIFIC WARRANTY
"VSH" SERIES LEVELER

In addition to the "Standard Product Warranty" provided with all McGuire Products, Systems Inc., guarantees materials, components and workmanship to be free of defects for the following extended periods:

- Structural Warranty (VSH) – For a period of five (5) years from the date of shipment, this warranty specifically applies to; the deck section, lip section, rear hinge assembly and front hinge assembly only.
- Hydraulic Warranty (VSH) – For a period of five (5) years from date of shipment, this warranty specifically applies to; the hydraulic pump and motor, all hydraulic cylinders, hydraulic pressure lines and fittings only.